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THE INTERNATIONAL CORRESPONDENCE SCHOOLS, SCRANTON, PA. U.S.A.

CIRCULAR
OF
INFORMATION



INSTRUCTION DEPARTMENT
ERECTED EXPRESSLY FOR PURPOSES OF CORRESPONDENCE INSTRUCTION AT A COST OF \$225,000.

1898.

THE CORRESPONDENCE SCHOOL OF PEDAGOGY.

A SYSTEM OF HOME STUDY IN

THE PEDAGOGICS OF

Arithmetic, Grammar, History, Orthography,

Geography, Civics, Rhetoric.

16899.

FOR WHOM DESIGNED.

The Correspondence School of Pedagogy is a practical and thorough system of home instruction, without loss of time from work, for:

TEACHERS OF

Arithmetic,
Grammar,
Orthography,
Geography,
U. S. History,
U. S. Civil Government,
Rhetoric,

SCHOOL SUPERINTENDENTS,

SCHOOL PRINCIPALS,
STUDENTS IN

Academies,
Colleges,
High Schools,
Normal Schools,
Technical Schools,

PRIVATE TUTORS,

TEACHERS IN

Public Graded Schools,
District Schools,
High Schools,
Academies,
Private Schools,
Manual Training Schools,
Night Schools,

and for all others who intend to teach the branches mentioned or allied branches. It is intended to furnish such reviews, suggestions, and instruction in methods of teaching as will be of material and practical help to all classes of actual or intending teachers.

JUDGE US BY OUR WORK.

One good way to form an opinion of our Schools is to send to us for a free sample copy of HOME STUDY MAGAZINE, our new monthly for students of technical subjects. Most of the articles in it are written by the Instructors and illustrated by the Draftsmen and Artists of the Schools. Every drawing and illustration in it is made with pen and ink in our own establishment, and the reproductions are zinc etchings made by photographic process. Compare the illustrations and the clearness and completeness of the descriptions of HOME STUDY MAGAZINE with the best work of similar character to be found anywhere, and just as they bear the mark of superiority, so does everything else connected with our Institution. Refer our drawings to any engineer and he will at once admit their superiority.

TESTIMONIALS.

On application, we will send to any address a book of Testimonials from students residing in all sections of the United States, Canada, and Mexico, containing their indorsement of the Schools and system of instruction.

REFERENCES.

Further, to persons thinking of enrolling as students, we will send the name and address of a student living in the same neighborhood, whom they can consult or correspond with as to the practicability of the method of teaching and the value of the instruction imparted.

FINANCIAL STANDING.

The Colliery Engineer Company, proprietors of The International Correspondence Schools, are incorporated under the laws of Pennsylvania, and have a Credit Rating in the Mercantile Agencies of R. G. Dun & Co. and Bradstreet of from \$300,000 to \$500,000.

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ANNOUNCEMENT.

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THIS CIRCULAR CONTAINS:

FIRST:—A description of the courses of instruction in The International Correspondence Schools, with a list of the instructors, and statements of what classes the different courses are designed for ; and a table showing the number of students enrolled, and the states and countries in which they reside. It also contains a brief history of the Schools, and a full description of the method of teaching employed. It shows how admirably the method meets the requirements of those who, for want of time and means, cannot attend regular schools ; and calls attention to its original features, which make it more thorough and practical than correspondence instruction as conducted in other institutions ; to its superiority over the reading of ordinary textbooks ; and to the magnificent opportunities our Schools offer men in isolated localities, those of mature years, teachers and other professional workers, to make up deficiencies in education or to increase their acquirements in technical or professional knowledge. It gives the requirements for admission, rules for enrolling, prices of scholarships, and other expenses, and information regarding diplomas and certificates of proficiency granted.

SECOND:—Details of the course of study in the Pedagogics of English Branches ; the price of the scholarship and of the separate studies ; terms of payment ; diploma granted, etc., together with a statement relating to the teacher's work, pointing out the advantages of the Pedagogics of English Branches Course for principals and superintendents of schools, state and county superintendents, public school teachers, teachers in private schools and academies, private tutors, teachers in manual training schools, college students, etc. Sample pages from some of the papers conclude the contents of this circular.

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INCLUDING:

THE CORRESPONDENCE SCHOOL OF MINES,
THE CORRESPONDENCE SCHOOL OF MECHANICS,
THE CORRESPONDENCE SCHOOL OF STEAM ENGINEERING,
THE CORRESPONDENCE SCHOOL OF ELECTRICITY,
THE CORRESPONDENCE SCHOOL OF ARCHITECTURE,
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All of the above agencies are open day and evening. Visitors welcome. We are always glad to explain the methods of the Schools to any one. Come and ask us to tell you about the greatest school in the world.

FACULTY AND ORGANIZATION.

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J. J. CLARK, M. E.,
Assistant Manager.

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Professor of Mathematics.

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Professor of Mine Surveying.

LOUIS ALLEN OSBORNE,
Professor of Architectural History and Design.

WILLIAM A. GORMAN,
Professor of Architectural Drawing.

CLENDINEN A. THOMPSON,
Professor of Constructive Art.

MAURICE M. SLOAN,
Professor of Iron and Steel Construction.

S. ALAN SLOAN,
Professor of Quantity Surveying.

CHARLES J. ALLEN,
Professor of Drawing.

ERNEST K. RODEN, LIEUT. S. N. R.,
Professor of Navigation.

KEMPSTER B. MILLER, M. E.
Professor of Telegraphy and Telephony.

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MILTON O'CONNELL,
E. H. MAROT,

ROBERT YARROW, Kensington Art Schools.

INSTRUCTION DEPARTMENT.

THE SCHOOL OF MATHEMATICS AND PHYSICS.

FRED. V. MOSS, M. S., *Principal.*

INSTRUCTORS:

A. C. COLLIGAN,
M. E. HURST,
S. L. COLEMAN,
C. R. O'HARA,

A. T. MAHON,
B. A. BYRON,
J. A. WALTON,
L. L. WEAVER,

H. E. CHAMBERLIN.

SPECIAL INSTRUCTORS:

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Chief.

G. M. FREEMAN,
C. V. MALONEY,
G. E. McDERMOTT,
N. M. CADDEN,

C. M. KIMBLE,
M. R. HORAN,
J. E. GAVIGAN,
C. M. RELPH,

M. BOLAND.

The subjects taught in this School are included in the work of the Courses of the other Schools and will be found in their proper places, as Mathematics and Physics form the basis for most of the industrial sciences.

THE SCHOOL OF DRAWING.

L. H. KJELLSTEDT, C. I., *Principal.*

INSTRUCTORS:

F. M. SCOTT,
C. COKELY,
F. I. MELLON,
M. D. MURPHY,
C. B. EDSON,

N. LOFTUS,
L. MCANDREW,
M. D. LANGAN,
A. WILLIAMS,
A. C. BLEWITT,

A. A. CALLAHAN.

The Drawing and Designing Scholarships are described in the various Schools in which they are classified. Nearly every Scholarship has drawing in it, on account of the importance of this art in all the industrial sciences.

THE CORRESPONDENCE SCHOOL OF MECHANICAL ENGINEERING.

C. P. TURNER, M. E., *Principal*.

INSTRUCTORS:

L. E. RAFTER,
M. J. BRENNAN,
G. W. SHOPLAND,

J. C. MAHON,
I. G. SOMMARS,
M. M. McLAUGHLIN.

Complete Mechanical Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Drawing Division. Geometrical Drawing, Mechanical Drawing (Mechanical Division).
Intermediate Division. Algebra, Logarithms, Geometry and Trigonometry.	Technical Division. Steam and Steam Engines, Strength of Materials, Applied Mechanics, Steam Boilers, Machine Design, Dynamometers and Motors.
Advanced Division. Elementary Mechanics, Hydromechanics, Pneumatics, Heat.	

Those who will be most likely to be interested in this scholarship are machinists, machine-shop laborers, inventors and designers, tool makers, rolling-mill workers, pattern makers, and draftsmen; shop foremen, superintendents, and master mechanics; manufacturers, salesmen, and inspectors of machinery and boilers; office men in establishments manufacturing machinery; mechanics of all kinds,

and their sons, and mechanical apprentices. The student will obtain a good knowledge of the principles governing the action and operation of steam engines and boilers, the strength of materials, valve diagrams, governors, the measurement of power, etc.

Mechanical Drawing Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Drawing Division. Geometrical Drawing, Mechanical Drawing (Mechanical Division).
Intermediate Division. Formulas, Mensuration.	

This course is intended for those persons who desire to obtain a knowledge of how to represent on paper the details of machines. Few realize the importance of acquiring a knowledge of drawing. It is the basis of all mechanical work; a knowledge of it is essential in many. Our method of teaching drawing is original and practical, and is unsurpassed by any School in the world.

THE CORRESPONDENCE SCHOOL OF STEAM ENGINEERING.

C. P. TURNER, M. E., *Principal*.

INSTRUCTORS:

L. E. RAFTER,
M. J. BRENNAN,
G. W. SHOPLAND,

J. C. MAHON,
I. G. SOMMARS,
M. M. McLAUGHLIN.

Stationary Engineers' Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Mechanical Drawing (Stationary Division).
Intermediate Division. Formulas, Mensuration.	Technical Division. Steam and Steam Engines (Stationary Division), Steam Boilers (Stationary Division), Dynamometers and Motors.
Advanced Division. Mechanics.	
Drawing Division. Geometrical Drawing,	

When a student has completed the Stationary Engineers' Course he is able to make engineering calculations, when rules and formulas are given; understands how to set and run valves to the best advantage, and can take and read indicator cards; he understands the principles and construction of the condenser, the injector, the steam pump and steam boiler, and will be able, upon completing the course, to pass

any examination required for obtaining a license as a stationary engineer.

Marine Engineers' Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Mechanical Drawing (Marine Division).
Intermediate Division. Formulas, Mensuration.	Technical Division. Steam and Steam Boilers (Marine Division), Steam Engines (Marine Division), Dynamometers and Motors.
Advanced Division. Mechanics.	
Drawing Division. Geometrical Drawing,	

Marine engineers, and other employees on steam vessels, will find this course almost indispensable in preparing to pass examinations for marine engineers' licenses. It gives them a thorough knowledge of the theory of marine engineering, and qualifies them to make good drawings of their engines and to quickly repair breakdowns at sea.

THE CORRESPONDENCE SCHOOL OF STEAM ENGINEERING.—Continued.

Locomotive Engineers' Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Drawing Division. Geometrical Drawing, Mechanical Drawing (Locomotive Division).
Intermediate Division. Formulas, Mensuration.	Technical Division. Steam and Steam Engines,
Advanced Division. Mechanics.	Locomotives, Dynamos and Motors.

The elementary instruction in this course is full and complete and is exactly what the student needs. In the later papers, the locomotive is taken up in detail, and the student is told, in a clear and concise manner, all that he needs to know regarding valve gears, combustion, generation of steam, tractive power, etc. The different types of locomotives and cars are illustrated and described, and every part of a locomotive is named and its use explained. Our description of the operation and construction of air brakes, vacuum brakes, etc., is the best in print.

Traction Engineers' Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Mechanical Drawing (Stationary Division).
Intermediate Division. Formulas, Mensuration.	
Advanced Division. Mechanics.	Technical Division. Traction and Portable Engines,
Drawing Division.	Traction and Portable Machinery.

This course has been prepared by the assistant superintendent of one of the largest manufacturers of traction engines and farm machinery in the United States. The papers especially pertaining to traction engines and farm machinery cover the subject thoroughly, are intensely practical in their nature, and contain exactly what any person wants who operates traction engines or has anything to do with farm machinery.

Refrigeration Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Pneumatics, Heat.
Intermediate Division. Mensuration, Elementary Algebra and Trigonometric Functions, Logarithms.	Drawing Division. Geometrical Drawing, Mechanical Drawing (Stationary Division).
Advanced Division. Elementary Mechanics	Technical Division. Ice Making and Refrigerating Machinery.

This course has been prepared by an engineer who has had a wide experience in connection with refrigerating machinery, and who made a special study of the subject of refrigeration while pursuing his course at college. All the different methods of refrigeration are explained in detail. Our papers on this subject are more practical and cover in greater detail the subject of refrigeration and refrigerating machinery than any textbook published in the English language.

Gas Engineers' Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Pneumatics, Gas, and Petroleum, Heat.
Intermediate Division. Mensuration, Elementary Algebra and Trigonometric Functions, Logarithms.	Drawing Division. Geometrical Drawing, Mechanical Drawing (Stationary Division).
Advanced Division. Elementary Mechanics	Technical Division. Gas, Gasoline, and Oil Engines.

The student who finishes this scholarship will be able to make engineering and mechanical calculations, when rules and formulas are given, and to make neat and finished drawings; will understand gas, gasoline, and oil engines; can estimate the size of engine required for a given power; will know how to select a good engine, set it up, start and run it without trouble, and can promptly locate and remedy defects.

THE CORRESPONDENCE SCHOOL OF ELECTRICITY.

W. H. DONNER, E. E., *Principal.*

INSTRUCTORS :

S. J. GAVAN,
A. A. HINE,

N. HART,
A. L. NICOLS,

Electrical Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Advanced Division. Elementary Mechanics
Intermediate Division. Mensuration, Elementary Algebra and Trigonometric Functions.	Drawing Division. Geometrical Drawing, Mechanical Drawing (Electrical Division).

Technical Division.

Principles of Electricity and Magnetism. Electricity Measurements, Batteries,	Applied Electricity, Power Transmission, Electric Railways, Electric Lighting, Design of Continuous-Current Dynamos and Motors.
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This course is intended for those who desire to begin the study of electrical subjects as soon as possible and therefore desire to eliminate all instruction in mathematics, physics, and mechanics not absolutely essential to an

THE CORRESPONDENCE SCHOOL OF ELECTRICITY.—Continued.

understanding of those subjects. As it is impracticable to give instruction in either the principles of alternating-current apparatus or its design without more advanced instruction in mathematics and physics than the Electrical Course provides, those who desire instruction in the design of alternating-current apparatus will be obliged to take the regular Electrical Engineering Course.

Electrical Engineering Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Strength of Materials,
Arithmetic.	Applied Mechanics,
	Steam Boilers,
Intermediate Division.	Machine Design.
Algebra,	
Logarithms,	
Geometry and	
Trigonometry.	
Advanced Division.	<i>Electrical Section.</i>
Elementary Mechanics	Principles of Electric-
Hydromechanics,	ity and Magnetism,
Pneumatics,	Electrical Measure-
Heat.	ments,
	Batteries,
Drawing Division.	Applied Electricity,
Geometrical Drawing,	Power Transmission,
Mechanical Drawing	Electric Railways,
(Mechanical Divi-	Electric Lighting,
sion).	Design of Continuous-
Technical Division.	Current Dynamos
<i>Mechanical Section.</i>	and Motors,
Steam and Steam	Principles of Alterna-
Engines,	ting-Currents,
	Design of Alternating-
	Current Apparatus.

After completing this course the student will be qualified, as far as theoretical education is concerned, to manage manufactories of electrical goods, and to operate and install electrical machinery. This course is intended for consulting engineers, superintendents and foremen of electrical establishments, electrical factory artisans, civil and other engineers, draftsmen, machinists, inventors, patent lawyers, teachers of electrical science; also for workmen connected with electric lighting and railway companies, who wish a knowledge of the principles of the design and construction of apparatus under their charge. It is a complete and thorough course of study in Electrical Engineering.

Electric Power and Lighting Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Drawing Division.
Arithmetic.	Geometrical Drawing,
	Mechanical Drawing
Intermediate Division.	(Electrical Divi-
Formulas,	sion).
Mensuration.	Technical Division.
	Dynamos and Motors,
Advanced Division.	Electric Lighting,
Mechanics.	Electric Railways.

The Electric Power and Lighting Scholarship is intended for superintendents and managers of electric-light and power plants and electric

railways, for dynamo tenders, linemen, wiremen, and workers in electrical industries; for those engaged in the installation and operation of electrical machinery and equipment. It embraces instruction in the principles and construction of dynamos and motors; the arrangement and the equipment of, and the distribution of power from, central stations are covered in detail, including the construction of pole lines and conduits. The principles of arc and incandescent lamps are fully explained, and both street and interior wiring and lighting are taught. The construction, equipment, and operation of electric street railways is treated in accordance with the most approved methods.

Electric Lighting Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Advanced Division.
Arithmetic.	Mechanics.
Intermediate Division.	Technical Division.
Formulas,	Dynamos and Motors,
Mensuration.	Electric Lighting.

Those who work in electric-lighting plants or on the outside equipment will find that this course will qualify them to intelligently and efficiently do any of the work in connection with these plants.

Electric Railways Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Advanced Division.
Arithmetic.	Mechanics.
Intermediate Division.	Technical Division.
Formulas,	Dynamos and Motors,
Mensuration.	Electric Railways.

This course gives employes in electrical railway power plants and barns, conductors, motormen, and outside men, that thorough knowledge of the machines and the force they handle which is necessary to their advancement.

Electric Mining Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Electric Coal Cutting
Arithmetic.	Machinery and
	Dynamo Shot
Intermediate Division.	Firing,
Formulas,	Electric Hauling,
Mensuration.	Hoisting, and
	Signalling,
Technical Division.	Electric Pumping and
Dynamos and Motors,	Lighting.

The applications of electricity to mining have become so numerous and have been so widely adopted as to beget on the part of both mining and electrical men a demand for what has already become a very attractive specialty. The course above outlined is the most complete treatise relating to the installation, operation, and maintenance of Electric Mining Machinery ever prepared, and is the epitome of the experience of the most progressive mining corporations.

THE CORRESPONDENCE SCHOOL OF ELECTRICITY.—Continued.

Telegraphy Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Advanced Division. Elementary Mechanics
Intermediate Division. Mensuration, Elementary Algebra and Trigonometric Functions.	Technical Division. Principles of Electric- ity and Magnetism, Electrical Measure- ments, Batteries, Telegraphy.

The object of the above course in technical telegraphy is to make the student thoroughly acquainted with every feature of telegraph and cable work, and to qualify him to fill any position in the profession to which he may aspire. Every telegrapher will find it to his advantage to take this course.

Telephony Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Advanced Division. Elementary Mechanics
Intermediate Division. Mensuration, Elementary Algebra and Trigonometric Functions.	Technical Division. Principles of Electric- ity and Magnetism, Electrical Measure- ments, Batteries, Telephony.

This course is intended for telephone experts, inspectors, and managers, and persons who wish to qualify to fill such positions. Every ambitious person connected with the telephone business, no matter how familiar he may be with certain features of the work, will find it to his advantage to take this course.

Electrotherapeutics Scholarship.

SUBJECTS TAUGHT :

Technical Division. Electrophysics, Electrophysiology, Electrodiagnosis,	Electrotherapeutics, General and Special.
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Our Electrotherapeutics Course was prepared by men of high professional rank and of abundant experience acquired by study and practice in this special line. It is intended only for physicians, surgeons, nurses, and other persons of medical training.

Wiring and Bell Work Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic. Intermediate Division. Formulas, Mensuration.	Advanced Division. Electric-Light Wiring and Bell Work.
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This course is intended primarily for gas-fitters, plumbers and others who do house wiring and bell work as a side line, but it will also be found of benefit to any electrical worker engaged in similar work.

THE CORRESPONDENCE SCHOOL OF ARCHITECTURE.

W. SCOTT-COLLINS, ARCHITECT, *Principal.*

INSTRUCTOR :

L. M. DONNEGAN.

Complete Architectural Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Joinery, Stair Building, Architectural
Intermediate Division. Formulas, Geometry and Trigonometry.	Engineering, Ornamental Iron Work, Roofing, Plumbing and Gas Fitting.
Advanced Division. Elementary Mechanics Hydromechanics, Pneumatics.	Sheet Metal Work, Heating and Ventila- tion, Electric Light Wiring and Bell Work, Painting and Decora- ting.
Drawing Division. Geometrical Drawing, Architectural Drawing Part 1, Ornamental Drawing, Architectural Drawing Part 2.	<i>Office Practice Section.</i> History of Architecture Architectural Design, Specifications, Building
Technical Division. <i>Building Trades Section.</i> Masonry, Carpentry,	Superintendence, Permits, Contracts, etc. Estimating and Calcula- lating Quantities.

The above course is intended to qualify those who complete it to design architectural structures of any class, to select the proper materials for various purposes, to superintend the erection of buildings, to draw up contracts, and to make reliable estimates. The course is recommended for architects, clerks, and draftsmen in architects' offices, contractors and builders, building inspectors, clerks of works, insurance inspectors and adjusters, and all who wish, or need, a thorough education in the profession of architecture.

Architectural Drawing and Designing Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Architectural Drawing Part 1, Ornamental Drawing, Architectural Drawing Part 2.
Intermediate Division. Formulas, Mensuration.	Technical Division History of Architecture Architectural Design.
Drawing Division. Geometrical Drawing,	

THE CORRESPONDENCE SCHOOL OF ARCHITECTURE.—Continued.

This course is intended for all apprentices and mechanics, employed either in the office of the architect or in the shop or yard of the wood or stone worker. Persons who wish to qualify themselves to become architectural draftsmen, or to fill other positions in architects' offices, will find this course exactly suited to their needs, as well as a good beginning for the study of architecture itself.

Architectural Drawing Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Drawing Division. Geometrical Drawing, Architectural Drawing Part 1.
Intermediate Division. Formulas, Mensuration.	

This scholarship is intended for carpenters, joiners, cabinet makers and hard wood workers, stair builders, stone cutters, masons, plasterers, housesmiths, etc., etc., who do not wish to take our Complete Course in Architecture or to qualify themselves to become Architectural Draftsmen, but desire to obtain a sufficient knowledge of mathematics to thoroughly understand the calculations connected with their respective trades, and of architectural drawing to qualify them to make smooth and accurate drawings of the plans, sections, and details of carpentry, masonry, and iron work, and the plans, sections, and elevations of buildings. All classes of building mechanics will find it to their advantage to take our Architectural Drawing Course. It will prove the surest road to a position at the top of the ladder. Even the most ambitious, e.g., those who desire to become Architects, can use it as a stepping stone toward the object of their ambition.

THE CORRESPONDENCE SCHOOL OF CIVIL ENGINEERING.

BENJAMIN F. LA RUE, C. E., *Principal*.

INSTRUCTORS :

L. RECHSTEINER,
B. E. CONGER,
M. L. MOFFITT,

J. M. THOMAS,
C. SCHUBERT,
M. A. CALLAHAN.

Civil Engineering Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Proportioning the Material, Details of Construction Details, Bills, and Estimates.
Intermediate Division. Algebra, Logarithms, Geometry and Trigonometry.	<i>Steam Engineering Section.</i> Steam and Steam Engines, Steam Boilers, Locomotives.
Advanced Division. Elementary Mechanics Hydromechanics, Pneumatics, Heat.	<i>Railroad Section.</i> Surveying, Land Surveying, Mapping, Railroad Location, Railroad Construction, Track Work, Railroad Structures.
Drawing Division. Geometrical Drawing, Mechanical Drawing, (Bridge Division).	<i>Municipal Section.</i> Drainage, Sewerage, Streets and Highways, Paving.
Technical Division. <i>Natural Science Section.</i> Descriptive Astronomy Elementary Chemistry Economic Geology of Coal, Economic Geology of Metals, Blowpiping, Mineralogy.	<i>Hydraulic Section.</i> Waterwheels, Hydraulic Machinery, Water Supply and Distribution, Irrigation.
<i>Bridge Section.</i> Elementary Graphical Statics, Strength of Materials, Analysis of Stresses,	<i>Electrical Section.</i> Dynamamos and Motors, Electric Lighting, Electric Railways.

The Complete Civil Engineering Scholarship embraces all the subjects taught in The Correspondence School of Civil Engineering.

Bridge Engineering Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Mechanical Drawing (Bridge Division).
Intermediate Division. Algebra, Logarithms, Geometry and Trigonometry.	Technical Division. Elementary Graphical Statics, Strength of Materials, Analysis of Stresses, Proportioning the Material, Details of Construction Details, Bills, and Estimates.
Advanced Division. Elementary Mechanics Hydromechanics, Pneumatics.	
Drawing Division. Geometrical Drawing,	
The Bridge Engineering Scholarship is intended for those who desire to obtain a knowledge of the principles of bridge design and construction. The course covers the general design of bridges, and at the same time enters into a fuller and more complete consideration of the designing of practical shop details than any other literature on the subject.	

Surveying and Mapping Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Drawing Division. Geometrical Drawing.
Intermediate Division. Formulas, Geometry and Trigonometry, Logarithms.	Technical Division. Surveying, Land Surveying, Mapping.

The various branches of surveying and the art of making maps are taught in such a manner as to thoroughly qualify for practical work in both field and office.

THE CORRESPONDENCE SCHOOL OF CIVIL ENGINEERING.—Continued.

Railroad Engineering Scholarship.

SUBJECTS	TAUGHT :
Preparatory Division. Arithmetic.	Mechanical Drawing (Bridge Division).
Intermediate Division. Algebra, Logarithms, Geometry and Trigonometry.	Technical Division. Strength of Materials, Surveying, Land Surveying, Mapping,
Advanced Division. Elementary Mechanics, Hydromechanics, Pneumatics.	Railroad Location, Railroad Construction, Track Work, Railroad Structures.
Drawing Division. Geometrical Drawing,	

This scholarship constitutes a complete course of instruction in the survey, location and construction of railroads, and is of great value, not only to those who contemplate becoming railroad engineers, but to those already engaged in the practice of civil engineering.

Hydraulic Engineering Scholarship.

SUBJECTS	TAUGHT :
Preparatory Division. Arithmetic.	Hydraulics, Pneumatics.
Intermediate Division. Algebra, Logarithms, Geometry and Trigonometry.	Drawing Division. Geometrical Drawing, Mechanical Drawing (Hydraulic Division).
Advanced Division. Elementary Mechanics	Technical Division. Strength of Materials, Surveying,

Surveying and
Mapping,
Steam and Steam
Engines,
Steam Boilers,

Water Wheels,
Hydraulic Machinery,
Water Supply and
Distribution,
Irrigation.

The Hydraulic Engineering Scholarship is intended for, and of value to, those interested in water works, water wheels, hydraulic machinery and the development of water-power. The young man in search of a profession, the draftsman, surveyor, or mechanic in search of promotion, and the practicing civil engineer in search of a paying specialty, will find this branch of civil engineering fast coming into prominence.

Municipal Engineering Scholarship.

SUBJECTS	TAUGHT :
Preparatory Division. Arithmetic.	Mechanical Drawing (Municipal Division).
Intermediate Division. Algebra, Logarithms, Geometry and Trigonometry.	Technical Division. Strength of Materials, Surveying, Land Surveying,
Advanced Division. Elementary Mechanics, Hydromechanics, Pneumatics.	Mapping, Drainage, Sewerage,
Drawing Division. Geometrical Drawing,	Streets and Highways, Paving.

The Municipal Engineering Scholarship is intended for those who aim to become proficient in those matters of Municipal Engineering relating to sewerage, drainage, pavements, and the general arrangement of streets and blocks, and the location, construction, and maintenance of streets and highways.

THE CORRESPONDENCE SCHOOL OF CHEMISTRY.

G. H. DIMPFL, PH. D., *Principal.*

INSTRUCTOR :
H. J. KEWISH.

Chemistry, Including Qualitative and Quantitative Analysis Scholarship.

SUBJECTS	TAUGHT :
Preparatory Division. Arithmetic.	Advanced Division. Physics.
Intermediate Division. Elementary Algebra and Trigonometrical Functions.	Technical Division. Theoretical Chemistry, Inorganic Chemistry, Organic Chemistry, Qualitative Analysis, Quantitative Analysis.

This course will qualify any student who has studied the Papers carefully and performed the experiments and analyses, to fill a position as chemist in chemical works, such as acid works, soda works, paint and aniline factories, sugar manufacturing and refining plants, fac-

ories for the production of fertilizers, etc., and in Board of Health Departments. It will enable him to successfully pass the Civil Service examination for the post of "Chemist" under the United States Government, or to fill any chemist's position.

Chemistry, Including Qualitative Analysis Scholarship.

SUBJECTS	TAUGHT :
Preparatory Division. Arithmetic.	Advanced Division. Physics.
Intermediate Division. Elementary Algebra and Trigonometrical Functions.	Technical Division. Theoretical Chemistry, Inorganic Chemistry, Organic Chemistry, Qualitative Analysis.

THE CORRESPONDENCE SCHOOL OF CHEMISTRY.—Continued.

This course is of value to drug clerks and such other persons as may have occasion to ascertain of what substances certain materials are composed, but do not care to know the proportions in which such substances are present.

Inorganic and Organic Chemistry Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.
Arithmetic.

Intermediate Division.
Elementary Algebra
and Trigonometric
Functions.

Advanced Division.
Physics.

Technical Division.
Theoretical Chemistry,
Inorganic Chemistry,
Organic Chemistry.

This scholarship is elementary and is not intended to make a man a chemist. It is designed merely for those who wish to increase their general fund of information, or to prepare for examinations in the subject of elementary chemistry, or for those who wish to review what they have previously learned. Students entering academies and colleges, who desire to take advanced standing, or who are behind their classes in chemistry, will find this course of value.

THE CORRESPONDENCE SCHOOL OF MINES.

COAL MINING DIVISION.

J. T. BEARD, E. M., *Principal.*

INSTRUCTORS :

L. V. MALIA,
N. L. REARDON,
M. A. O'DONNELL,

L. E. O'NEILL,
L. F. CLARK,
M. A. LYNCH.

METAL MINING DIVISION.

J. E. DWELLE, E. M., *Principal.*

INSTRUCTORS :

A. C. THOMPSON,

F. H. LERCHEN, E. M.,

S. G. DOUGHERTY.

Full Mining Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.
Arithmetic.

Intermediate Division.
Formulas,
Geometry and
Trigonometry.

Advanced Division.
Gases Met With in
Mines,
Mine Ventilation,
Economic Geology of
Coal.

Drawing Division.
Geometrical Drawing,
Mine Surveying and
Mapping.

Technical Division.
Coal Mining Section.
Prospecting for Coal,
Shafts, Slopes, and
Drifts,
Methods of Working
Coal Mines.
Mine Mechanical Section.
Mechanics,
Steam and Steam
Boilers,
Steam Engines,
Air and Air Compres-
sion,

Hydromechanics and
Pumping,
Haulage,
Hoisting and Hoisting
Appliances,
Mining Machinery,
Percussion Drills,
Surface Arrangements
of Bituminous
Mines,
Surface Arrangements
of Anthracite
Mines,
Dynamometers and Motors,
Electricity Applied in
Mining Operations.

Metal Mining Section.

Blowpiping,
Mineralogy,
Assaying,
Economic Geology,
Prospecting,
Placer and Hydraulic
Mining,
Preliminary Openings,
Permanent Openings,
Methods of Working
Metal Mines,
Crushing, Sizing, Con-
centrating, and
Amalgamating
Machinery.

This scholarship is the most comprehensive course in mining to be had anywhere. The student completing it knows thoroughly the theory of metal mining, assaying, prospecting, and coal mining, and has the intellectual equipment necessary for a position as a mining engineer in any class of coal or metal mining operations.

Complete Coal Mining Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.
Arithmetic.

Intermediate Division.
Formulas,
Geometry and
Trigonometry.

Advanced Division.
Gases Met With in
Mines,
Mine Ventilation,
Economic Geology of
Coal.

Drawing Division.
Geometrical Drawing,
Mine Surveying and
Mapping.

Technical Division.
Coal Mining Section.
Prospecting for Coal,

Shafts, Slopes, and
Drifts,
Methods of Working
Coal Mines.

Mine Mechanical Section.
Mechanics,
Steam and Steam
Boilers,
Steam Engines,
Air and Air Compres-
sion,
Hydromechanics and
Pumping,
Haulage,
Hoisting and Hoisting
Appliances,
Mining Machinery,
Percussion Drills,
Surface Arrangements
of Bituminous
Mines,
Surface Arrangements
of Anthracite
Mines.

THE CORRESPONDENCE SCHOOL OF MINES.—Continued.

The student who finishes this course obtains a better education in the theory of coal mining, than he can obtain in any college, or by reading textbooks, and is qualified to pass the examination for mine inspector in any state or country.

Mine Mechanical Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Air and Air Compression,
Arithmetic.	Hydromechanics and Pumping,
Intermediate Division.	Haulage, Hoisting and Hoisting Appliances,
Formulas, Mensuration.	Mining Machinery, Percussion Drills,
Advanced Division.	Surface Arrangements of Bituminous Mines,
Mechanics.	Surface Arrangements of Anthracite Mines,
Drawing Division.	Dynamos and Motors, Electricity Applied in Mining Operations.
Geometrical Drawing, Mechanical Drawing (Mining Division).	
Technical Division.	
Steam and Steam Engines,	
Steam Boilers,	

The student who masters this course will be thoroughly informed in the mechanical engineering of collieries and metal mines.

Metal Prospectors' Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Economic Geology.
Blowpiping.	Technical Division.
Advanced Division.	Prospecting,
Mineralogy, Assaying,	Placer and Hydraulic Mining.

The Metal Prospectors' Scholarship includes instruction in the composition, characteristics, occurrence, and appearance of ores of commercial value and enables one to tell from the appearance of the region over which he is passing whether it is worth while to halt and look for mineral. The student is also given instruction in blowpiping and assaying (subjects beyond the ken of the average old-time prospector) and in placer and hydraulic mining. Special attention is paid to the working of placer deposits in regions where, as in the Yukon Valley, the water is often scarce and the ground is frozen.

Metal Mining Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Placer and Hydraulic Mining,
Arithmetic.	Preliminary Openings, Permanent Openings, Methods of Working Metal Mines,
Intermediate Division.	Crushing, Sizing, Concentrating, and Amalgamating Machinery.
Formulas, Geometry and Trigonometry.	<i>Mine Mechanical Section.</i>
Advanced Division.	Mechanics, Steam and Steam Boilers, Steam Engines, Air and Air Compression, Hydromechanics and Pumping,
Blowpiping, Mineralogy, Assaying, Economic Geology.	Haulage, Hoisting and Hoisting Appliances, Percussion Drills.
Drawing Division.	
Geometrical Drawing, Mine Surveying and Mapping.	
Technical Division.	
<i>Metal Mining Section.</i>	
Prospecting for Gold and Silver,	

Everything, from the initial work of prospecting to crushing, sizing, and concentrating the ores, including the most approved methods of mining and the application of steam, compressed air, electricity and water, is clearly and concisely treated upon. Special attention is paid to mine machinery, and the latest improvements in the equipment of placer mines are described and explained.

Short Coal Mining Scholarship.

SUBJECTS TAUGHT :

Preparatory Division.	Technical Division.
Arithmetic.	Economic Geology of Coal,
Intermediate Division.	Prospecting for Coal, Shafts, Slopes, and Drifts,
Mensuration and Trigonometric Functions.	Methods of Working Coal Mines,
Advanced Division.	Mine Surveying, Mine Machinery.
Gases Met With in Mines, Etc., Mine Ventilation.	

This course is intended for those whose time for study is very limited and contains only what is absolutely necessary to qualify persons to act as mine officers or to pass the mine foremen's examinations.

THE CORRESPONDENCE SCHOOL OF PEDAGOGY.

WILLIAM B. RIDENOUR, A. M., *Principal.*

Pedagogics of English Branches Scholarship.

SUBJECTS TAUGHT :

Technical Division.	Pedagogics of Grammar,
Pedagogics of Arithmetic,	Pedagogics of Geography,

Pedagogics of U. S. History, Pedagogics of Civics, This scholarship is intended to take the place of the training received in Normal schools. It is designed to give an accurate idea of the methods that have been found by actual trial in the schoolroom to be of most practical value, and is an epitome of the experience of the most successful teachers of America, England, France, and Germany.

THE CORRESPONDENCE SCHOOL OF SHEET METAL PATTERN DRAFTING.

A. LANGERFELD, *Principal.*

Sheet Metal Pattern Drafting Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Elementary Instru- mental Drawing.
Intermediate Division. Mensuration, Elementary Plane Geometry, Practical Plane Geometry, Elementary Solid Geometry.	Technical Division. Practical Projection, Developments, Reading Working Drawings, Laying Out Patterns, Patterns for Plain and Bent Work, Patterns for Formed Work, Properties of Materials.
Drawing Division. Elementary Free-Hand Drawing,	

This course is intended for all the classes mentioned under the head of "Tinsmith's Pattern Cutting Scholarship," and in addition for pattern draftsmen, coppersmiths, shipwrights, boat builders, braziers, brass fitters, hammerers, aluminum workers, silversmiths, goldsmiths, designers of architectural metal work, designers of mechanical metal work, silverware designers, plated ware designers, chandelier designers, lamp designers, metal pattern makers, lamp makers, chandelier makers, plumbers, boiler makers, tank and stack builders, and all who wish to learn to design work of a certain capacity or strength. It will enable them to make, not only ordinary bent or rounded work, but such work as must

be hammered, swaged, swelled, formed, or pressed into the required shape.

Tinsmiths' Pattern Cutting Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Elementary Instru- mental Drawing.
Intermediate Division. Elementary Plane Geometry, Practical Plane Geometry, Elementary Solid Geometry.	Technical Division. Practical Projection, Developments, Reading Working Drawings, Laying Out Patterns, Patterns for Plain and Bent Work.
Drawing Division. Elementary Free-Hand Drawing,	

This course is designed for persons who wish to learn to lay out patterns from such data or working drawings as usually accompany orders for plain tin, sheet iron, and other sheet metal work of the kind which is merely cut, bent, and then seamed, riveted, soldered or brazed together. This course is particularly intended for tinsmiths, furnace setters, blower-pipe and conveyor makers, architectural metal workers, cornice makers, skylight and showcase makers, metal roofers, hardware merchants, and tinsmiths' apprentices. The Tinsmiths' Pattern Cutting Scholarship provides thorough instruction in those principles of pattern cutting which are common to all the sheet metal working trades.

THE CORRESPONDENCE SCHOOL OF PLUMBING, HEATING, AND VENTILATION.

T. N. THOMSON, *SANITARY ENGINEER, Principal.*

INSTRUCTOR:

E. E. FASSETT.

Sanitary Plumbing, Heating, and Ventilation Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Mechanical Drawing (Sanitary Division).
Intermediate Division. Formulas, Mensuration.	Technical Division. <i>Plumbing and Gas Fit- ting Section.</i>
Advanced Division. Mechanics.	Plumbing and Drainage,
Drawing Division. Geometrical Drawing,	Gas and Gas Fitting, Electric Light Wiring and Bell Work.

<i>Heating and Ventilation Section.</i>	Steam Heating, Hot-Water Heating, Furnace Heating, Ventilation of Build- ings.
Principles of Heating and Ventilation,	

This course of study is a combination of the Sanitary Plumbing, Gas Fitting, and Heating and Ventilation Scholarships; contains all the subjects taught in them, and is a comprehensive and valuable course. It is intended for those who, in addition to a regular plumbing business, are also interested in gas fitting, steam and hot-water heating, pipe fitting, etc., and, as far as theoretical education is concerned, will qualify to fill any position in the plumbing, gas fitting, or heating and ventilation industries.

THE CORRESPONDENCE SCHOOL OF PLUMBING, HEATING, AND VENTILATION.—Continued.

Sanitary Plumbing and Gas Fitting Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Mechanical Drawing (Sanitary Division).
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Intermediate Division. Formulas, Mensuration.	
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Advanced Division. Mechanics.	
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Drawing Division. Geometrical Drawing,	
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Technical Division. Plumbing and Drainage, Gas and Gas Fitting, Electric Light Wiring and Bell Work.

This course is intended for those who wish to study plumbing and gas fitting alone. It is particularly adapted to all plumbers and plumbers' helpers. It will greatly assist apprentices and helpers to rapidly become expert journeymen, and hence to receive full wages; and it will enable all who complete it to pass any examinations required to procure licenses.

Sanitary Plumbing Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Drawing Division.
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Intermediate Division. Formulas, Mensuration.	Geometrical Drawing, Mechanical Drawing, (Sanitary Division).
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Advanced Division. Mechanics.	
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Technical Division. Plumbing and Drainage.
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The student after completing this course is able to make the necessary calculations relating to pumps, boilers, tanks, pressure of water, flow of water through pipes, strength of pipes, cylinders and other materials, etc. He understands the principles of plumbing, is able to make plans and drawings of the plumbing and

drainage of buildings, and is qualified, as far as theoretical education is concerned, to undertake the design and execution of such work.

Heating and Ventilation Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Mechanical Drawing (Sanitary Division).
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Intermediate Division. Formulas, Mensuration.	
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Advanced Division. Mechanics.	
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Drawing Division. Geometrical Drawing,	
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Technical Division. Principles of Heating and Ventilation, Steam Heating, Hot-Water Heating, Furnace Heating, Ventilation of Build- ings.
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Pipe fitters, steam fitters, furnace men, and others who desire a knowledge of the science of heating and ventilation, will find this course admirably adapted to their wants.

Gas Fitting Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Drawing Division.
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Intermediate Division. Formulas, Mensuration.	Geometrical Drawing, Mechanical Drawing (Sanitary Division).
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Advanced Division. Mechanics.	
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Technical Division. Gas and Gas Fitting, Electric Light Wiring and Bell Work.
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This course covers in a practical way the whole of the theory of gas fitting, and in addition comprises instruction in house wiring and bell work.

THE CORRESPONDENCE SCHOOL OF ENGLISH BRANCHES.

C. W. FAUST, M. of E., *Principal*.

INSTRUCTORS :

B. C. CONGER,

L. F. EPLING.

English Branches Scholarship.

SUBJECTS TAUGHT :

Preparatory Division. Arithmetic.	Pennmanship or Letter Writing,
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Intermediate Division. Spelling,	Grammar, Geography, U. S. History, U. S. Civil Government.
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This course is designed to give a good general education to workmen and others who either could not or would not study in their youth, and is well suited to the purpose for which it was designed. Any one who wishes an education in these subjects, and is not so

situated as to attend school, will do well to enroll in this course.

The student who completes this course has a clear understanding of arithmetic, the rules governing the formation and pronunciation of words and is able to spell; understands the rules of grammar, can capitalize and punctuate correctly and properly compose sentences and paragraphs. He has a clear idea of the geography of the world, and a knowledge of the plan of government and history of our country. The instruction and practice of penmanship puts him on the road to become a first-class penman, and in letter writing he is taught to compose and arrange without error, business and social letters, telegrams, etc.

THE CORRESPONDENCE SCHOOL OF BOOKKEEPING AND STENOGRAPHY.

N. H. PROUTY, *Principal.*

INSTRUCTORS:

R. WESLEY KELLOW,

GEORGE H. GIBBS.

Complete Commercial Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Single Entry Bookkeeping.
Intermediate Division. Spelling, Penmanship, Grammar.	Technical Division. Double Entry Bookkeeping, Opening, Closing, and Changing Books, Stenography.
Advanced Division. Letter Writing,	

The student who receives instruction in all the subjects of this course has a complete knowledge of business arithmetic in all its branches and is able to apply his knowledge to any line of business; is able to spell correctly; understands the rules of grammar and their application; can capitalize and punctuate correctly, and can properly compose sentences and arrange paragraphs. The instruction and practice in penmanship puts him on the road to become a first-class penman; in letter writing he is taught to compose and arrange in proper form business and social letters, telegrams, etc.; he has a knowledge of the forms and papers used in business, is qualified to keep any set of books, whether single or double entry, or to change from one system to the other, and has a knowledge of shorthand that will fit him for a position as an amanuensis and give him a good foundation upon which to build a career as a professional reporter.

Bookkeeping and Business Forms Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Arithmetic.	Technical Division. Double Entry Bookkeeping, Opening, Closing, and Changing Books.
Intermediate Division. Penmanship.	
Advanced Division. Single Entry Bookkeeping.	

This course is intended to prepare students to fill positions as bookkeepers and general office assistants.

Complete Stenographic Scholarship.

SUBJECTS TAUGHT:

Preparatory Division. Spelling.	Advanced Division. Letter Writing.
Intermediate Division. Penmanship, Grammar.	Technical Division. Stenography.

This course is designed to prepare students for the duties of stenographers and is one of the best courses of instruction in this line ever offered to the public.

Certificate of Progress Department.

FOR the purpose of promoting the interests of our students with their employers and with those from whom they seek employment, we have organized a new Department in our Schools, known as the Certificate of Progress Department.

The same energy and ability which have made our Institution noted for promptness, accuracy, and success, will make this Department efficient.

DIVISION OF COURSES.

As a first step in the organization of the new Department, we have marked off each of the courses into Divisions. The subjects which are included in the several Divisions of each Course are shown on the preceding pages.

THE CERTIFICATES OF PROGRESS.

For every Division of his Course through which a student passes hereafter, he will receive a Certificate of Progress, stating that he has successfully completed the studies embraced in that Division. These Certificates of Progress will be issued under seal and will bear the signature of the Principal of the School. They will be handsomely lithographed.

SERVICES FREE OF CHARGE.

Every student who has completed, or may hereafter complete, the work of a Division of his Course, will be permitted to avail himself, free of charge, of the services of this new Department.

NOTICES TO EMPLOYERS.

As often as you complete a Division of your Course and receive a Certificate of Progress therefor, the new Department will notify your Employer, or Foreman, or Superintendent, or such other person as you may desire, of your progress. It will send such notices for every Division passed, and when you have finally completed your Course and been awarded your Diploma, it will also send notice of that fact.

ASSISTANCE IN CHANGING SITUATIONS.

If you are making application for a new situation, the new Department will, at your request, write to as many different persons or companies and as often as you may desire, describing your educational qualifications for the situation you may be seeking.

NO ACTION WITHOUT YOUR PERMISSION.

As one of the rules of our Institution is to conduct the work of the student with the greatest possible privacy, we will only notify Employers, Foremen, Superintendents, etc., of your advancement in your studies upon your permission so to do. Therefore, with each Certificate of Progress issued we will

send a blank form of request, which, if you desire to do so, you are at liberty to fill out and return to us. When these requests are received we will take pleasure in communicating with your Employer, or Foreman, or Superintendent, as the case may be. If you desire assistance in changing your situation you must send us a similar request.

A FREE EMPLOYMENT BUREAU.

We are in communication with many of the leading industries in the United States, and will leave no stone unturned to keep in close contact with all the principal employers in the trades and professions represented by our Courses. The great majority of employers, when the thoroughness and completeness of our work is demonstrated to them, appreciate at once the advantages sure to follow to their employes and themselves from a higher standard of education, and manifest a disposition to heartily cooperate with us. When they want new employes, many of these employers write to us for assistance in obtaining them, and this assistance is rendered without charge to either employer or employe. While it is impossible for us to promise situations to any one, there is no doubt that we will be able to place, from time to time, many students in very desirable positions. In fact, without inviting applications to supply employes, we have in years past been able to greatly benefit many of our students by finding them responsible and well paid positions.

THE CHIEF BENEFIT.

Where the new Department will do the most good to our students will be in bringing to the attention of their present employers the fact that they are students in our Schools and are making progress in their studies. There is not one Employer, Foreman, Superintendent, Manager, Master Mechanic, or Chief Engineer out of a thousand but will single out for promotion that employe who, with a laudable ambition to increase his knowledge and improve his capabilities, and at the same time increase his earning power, is devoting to study the hours which would otherwise be used in rest or recreation.

TAKE NOTICE.

The services of this new Department are only for Active students. By an Active student we mean one who has completed the studies of either the Preparatory Division or the Drawing Division of his course. We purpose to show an interest in the welfare of students who show sufficient interest in their own welfare to **study**. We have a special School Button for Active students which we furnish free on application.

STUDENTS AND GRADUATES, JULY, 1898.

UNITED STATES.			NEWFOUNDLAND.....			11
Alabama	373		SOUTH AMERICA.			
Alaska	31		Brazil.....		1	
Arizona	151		British Guiana		5	
Arkansas	141		Chile		3	
California	1,199		Colombia		10	
Colorado	831		Ecuador		1	
Connecticut	2,916		Venezuela		3	
Delaware	500		EUROPE.			
District of Columbia	277		Belgium		3	
Florida	205		Denmark		2	
Georgia	229		England		65	
Idaho	164		France.....		3	
Illinois	3,507		Germany		7	
Iudiana	693		Gibraltar		1	
Indian Territory	73		Italy		1	
Iowa	723		Norway		1	
Kansas	368		Russia		1	
Kentucky	193		Scotland		16	
Louisiana	235		Spain		2	
Maine	398		Sweden		2	
Maryland	675		Switzerland.....		2	
Massachusetts	4,338		Wales.....		7	
Michigau	1,060		ASIA.			
Minnesota	747		Asia Minor		1	
Mississippi	135		Burmah		1	
Missouri	1,205		Ceylon		1	
Montana	518		China		5	
Nebraska	247		India		18	
Nevada	79		Japan		20	
New Hampshire	234		Java		1	
New Jersey.....	1,687		Siam		2	
New Mexico	127		Straits Settlements		3	
New York	6,718		Sumatra		1	
North Carolina	169		AFRICA.			
North Dakota.....	66		Cape Colony		3	
Ohio	2,832		Madagascar.....		1	
Oklahoma	41		Madeira		1	
Oregon	272		Mashonaland		1	
Pennsylvania	9,833		Mauritius		1	
Rhode Island	868		Namaqualand		3	
South Carolina	175		Natal		5	
South Dakota	114		Rhodesia		2	
Tennessee	211		South African Republic		37	
Texas	458		OCEANIA.			
Utah	295		Australia		14	
Vermont	169		Hawaiian Islands		19	
Virginia	386		New Zealand		17	
Washington	470		Tasmania.....		7	
West Virginia.....	325					
Wisconsin			663			
Wyoming			104			
CANADA.						
Alberta	36					
Assiniboia	31					
British Columbia	331					
Manitoba	66					
New Brunswick	105					
Nova Scotia	229					
Ontario	500					
Prince Edward Island	9					
Quebec	193					
Saskatchewan	1					
Yukon	1					
MEXICO.						
Aguas Calientes.....	2					
Chiapas.....	1					
Chihuahua	12					
Coahuila	13					
Durango	17					
Guanajuato	12					
Hidalgo	15					
Jalisco	8					
Lower California	3					
Mexico	25					
Michoacan	1					
Nuevo Leon	5					
San Luis Potosi.....	11					
Sinaloa	1					
Sonora	17					
Tamaulipas	5					
Vera Cruz	6					
Yucatan	2					
Zacatecas	6					
CENTRAL AMERICA.						
Costa Rica	2					
Guatemala	2					
Nicaragua	3					
San Salvador	1					
WEST INDIES.						
Antigua	1					
Cuba	3					
Grenada	1					
Hayti	2					
Jamaica	12					
Saint John	1					
Santo Domingo.....	1					
BERMUDA			4			
GREAT MIQUELON.....			1			

NOTE.—Any one desiring may verify these figures by calling at our offices, at Scranton, Pa.

THE INTERNATIONAL CORRESPONDENCE SCHOOLS.

"To be accurate, write;
To remember, write."

Correspondence Instruction in Theories of the Trades.

The International Correspondence Schools were the first to give instruction by correspondence in the theories of the trades and engineering professions, and have done more within the last five years to benefit miners, mechanics, and others in need of technical instruction than any other educational institution. The system of instruction they originated has developed into the largest technical school in the world, has overcome the difficulties which attend these classes in their efforts to educate themselves at night school or by home study with textbooks, has placed technical education within the reach of thousands who would otherwise have remained in ignorance of the theories of their trades, and has helped hundreds to become superintendents, foremen, draftsmen, engineers, etc., who, without it, would never have obtained such positions.

Courses for Teachers.

We are now applying the correspondence method to the instruction of teachers in the science of Pedagogy, as applied in a practical way to separate branches of study. Thousands of teachers in all parts of the country feel the need of special instruction in the subjects they are teaching; they feel the inadequacy of their own methods and appreciate such helpful and suggestive courses as we are now able to offer them.

We Write Our Own Textbooks.

Until within a very few years all teaching by correspondence was conducted with regular textbooks, which are not as well adapted to correspondence instruction as textbooks especially prepared for the purpose. Mr. T. J. Foster, Manager of the International Correspondence Schools, originated the plan of teaching by means of specially prepared texts. To write and illustrate the Papers of the Schools has required an expenditure of nearly \$200,000. Without our original methods such growth as these Schools have experienced would have been impossible.

Practical Plan of Home Study. The Schools are not intended to take the place of the regular technical schools and colleges, and those who are in position to attend such institutions are advised to do so. Our province is to provide education for those who are ambitious to rise in life, but who cannot afford to lose time or leave home to study. For the first time, a practical and efficient system of instruction is offered to these classes.

Our Success in Teaching. Our scholars are unanimous in praising the method of instruction and the attention received from instructors, and without exception, when they apply themselves, make satisfactory progress.

Adapted to the Needs of All. Correspondence instruction is adapted to all. We accept students of any nationality or color, sex, or religion, from ten years old upwards, and point with well earned pride to the thousands who have reached the goal of technical education by this path. In times past three great factors—age, time, and expense—have chiefly controlled the educational acquirements of men, but these have been largely removed by the correspondence method of instruction. Here is a system which enables one to overrule the circumstances which have hitherto hedged him about. None of these factors are now barriers to the advancement of the ambitious. Those of mature years take advantage of this method as well as the young and inexperienced. The value of every hour is enhanced by the ability to use it in preparing for advancement. The expense is reduced to a minimum.

METHOD OF TEACHING.

Short Lessons. The Instruction Papers, which are the textbooks for our students, are printed pamphlets or books of 30 to 150 pages. The Instruction Papers are accompanied by Question Papers containing questions upon the subject under study.

When a student enrolls he receives his first and second sets of Instruction and Question Papers. Accompanying these four pamphlets are printed instructions telling him how to proceed with his work, and how to study. After reading these instructions the student studies his first Instruction Paper.

How the Student Studies. After having thoroughly mastered this he lays it aside and takes up his Question Paper and answers in turn every question, upon sheets of foolscap, writing on one side of the paper only; he then puts his work in an addressed envelope which is provided by the School, and mails it.

Correction of His Work. When a set of answers is received by the School, it is examined with the utmost care; all errors are corrected in red ink, and the work is returned with such suggestions and criticisms as will enable the student to understand the subject. Every mistake is pointed out and everything fully explained.

Percentage Marks. A percentage mark is given according to merit. If the paper does not deserve 90 per cent., the student is required to rewrite the incorrect part of the work until he satisfies the Instructor that he understands it. If necessary, additional work is given him.

How the Student is Kept at Work. When the student mails his work on Question Paper No. 1, he commences the study of Instruction Paper No. 2, and proceeds with it as with the previous Paper.

When he has gained a passing mark in Question Paper No. 1, his work is returned to him to keep, and at the same time Instruction Paper No. 3 and Question Paper No. 3 are sent him.

When he receives No. 3 Papers, he lays them aside until he has finished No. 2. When he mails his work on No. 2, he takes up No. 3, and when his work on No. 2 is returned to him, he is sent No. 4 Papers, and so on. By this system the student has always a set of Papers on hand to study while the work on the other set is going through the mail.

He Receives Personal Assistance. When a student meets with difficulty in understanding anything in the Papers, the Instructors of the School come to his relief through the mails.

For this purpose each student is furnished by the School, free of charge, with addressed envelopes and information blanks. A copy of the latter is printed on the next page.

When the student has given a subject a thorough trial and cannot understand it, all he has to do is to fill out one of these blanks, stating the difficulty, and mail it to us.

Full Explanations. When this is received, the Instructor answers it by return mail. *He explains fully, if it requires a dozen sheets of paper to do so.*

We would rather have a student write to us for explanations every day, than fail to understand a principle or anything treated of in the Instruction Paper.

Bound Volumes of Instruction and Question Papers. In addition to, and independent of, the Instruction and Question Papers above referred to, we send to each student when he enrolls, without extra charge (except for expressage or freight), a complete duplicate set of all the Papers in his Course, fully indexed, and handsomely bound in volumes, which he can use as a reference library, and which will be of great value to him in his work while going through his Course.

All Text-books Are Free. The Instruction and Question Papers are the only textbooks the student requires. They become his property, and are not returned to us.

We pay all postage in sending papers or communications to the students. They pay the postage on their mail to us.

When a man has completed a course he must pass a final examination before he is given a Diploma or Certificate of Proficiency.

Information
Blank.

The International Correspondence Schools.

SCRANTON, PA., U. S. A.

Observe the following Points when Using this
INFORMATION BLANK:

When to be Used. (1) Use it whenever, after a fair trial, you cannot understand the principles stated in the Instruction Papers or cannot work the problems in the Question Papers.

(2) Be sure to give ALL the data asked for on this blank.

How to be Used. (3) When asking for information regarding an example, the printed answer of which you are unable to obtain, ALWAYS SEND US YOUR SOLUTION of your work as far as you can go, thus we can see just where your error lies, if any exists, and we can give you exactly the information you need. Sometimes your answers may differ from ours, owing to the number of decimal places carried (usually four are sufficient, but some calculations require more). We make no deduction from your mark in such cases, provided your work and principle are correct.

(4) ALWAYS WRITE YOUR ADDRESS IN FULL ON EVERYTHING YOU SEND US.

USE THE YELLOW BLANK LAST.

Name of Student..... Class Letter and
No..... Post-office..... State.....
No. of Question..... Page.....
In the..... edition of Paper, subject.....

Date..... 189.....

ADVANTAGES OF CORRESPONDENCE INSTRUCTION.

Deficiencies in Education Can be Made Up. Our method fills a great want, and fully fills it. It is an opportunity for the indigent student to get an education; for the ambitious to secure independence; for the poor man to redeem himself from poverty. He can study and work at the same time; make use of the odd bits of time, which, wasted, are not even missed, but which will enable him in a few years to become a leader in any department of knowledge.

Individual Instruction at Time and Place Best Suited to Student. By the correspondence method each student is a class in himself. He can select his own time for study and can carry his studies with him, so that whenever and wherever he has any spare time he can make good use of it.

Wherever the mails go the student can be taught, so that locations may be changed as often as desired.

He can study at home without interfering with his work or social engagements. He loses no time in going to and from school, and he need not get ready to go out.

When he has studied as long as he wishes he can retire, as he is at home.

The education goes to the student instead of the student to the education.

Qualifies for Written Examinations. Correspondence instruction strengthens those faculties which are particularly called into play at examinations—the power to correctly and promptly write out on paper answers to the questions asked. The student learns to express himself freely and grammatically on paper, and remembers what he learns, not because he writes his answers, but because he learns them so well that he can write them.

Instruction Confidential. The correspondence student is taught confidentially and does not need to expose his ignorance to his associates.

Requires Thoroughness. He must do his work thoroughly. Written lessons are subject to more searching scrutiny than oral lessons. The correspondence student soon learns, what every student learns in time, that only by persistent toiling can his efforts be crowned with success. This creates self-dependence.

Every part of a correspondence lesson can be gone over repeatedly until it is fully understood.

Even the apparent misfortune of partial or entire lack of occupation may be turned to advantage by this method of home study.

The Dull Student Eventually Completes the Same Studies as the Bright One. Some students can do their work more quickly than others, because of natural ability, previous education, or more time for study. Suppose two men join on the same day. One is brighter than the other, and is able to write out his answers to the questions in one of the Question Papers in, say, three days, while the other man takes, perhaps, a week. Now, if one student had to wait on another, the brighter student would be

delayed in this case, but as every student is a class in himself, each is advanced in the course as fast as his ability will carry him, independently of others. But even if the dull student does progress more slowly, it is only a question of time until he completes the same studies.

We have the best instructors possible to procure ; special pains are taken with dull students, and we never fail to educate any person who will study.

**Forms Habits
of Accuracy.**

Wise direction through correspondence by competent instructors will produce better results than can be expected from unaided individual efforts. It forms habits of accuracy and thoroughness, since nothing can be skipped and the whole lesson must be learned and written.

While the student has the most skilful direction in his studies he is at the same time his own schoolmaster, and pursues his work without fear, constraint, or obligation.

**Close Relations of In-
structor and
Student.**

The relations of Instructors and students are more personal than is possible by any other system. The correspondence Instructor in reviewing and correcting the work of one student at one time is interested in him alone, and therefore can better see his defects. He does not know his pupil, and cannot be influenced by him in any way.

OUR IMPROVED METHOD.

**No Fixed
Time for
the Comple-
tion of Our
Courses.**

We do not have a fixed time for the beginning or completion of any course or any part of it. Students can enroll at any time ; their instruction is commenced immediately, and we enter into a definite agreement with each one that, as soon as his Scholarship is paid in full it shall be non-forfeitable, and continue in force until instruction is furnished in all the subjects included in it ; that the student can lay aside his studies as often as he may find it necessary, and resume them again when he finds it convenient ; and that if at any time the student desires to stop studying, he has the right to sell or give his Scholarship to some other person.

**Scholarships
Nonforfeit-
able and
Transfer-
able.**

Special information is furnished students as often as desired, on blanks supplied by the School.

**We Write
and Illus-
trate Our
Texts.**

We write and illustrate, expressly for the purpose, all the textbooks we use in teaching, and employ a large staff of engineers and draftsmen exclusively in this work. The textbooks used are prepared by the ablest specialists.

**Our Texts
Are Accu-
rate.**

Our textbooks are original in composition and illustration, are not compilations from other works, and contain fewer errors than any other textbooks on the subjects of which they treat. Nothing of value is omitted from any course, and we leave out everything not necessary. In explaining a subject our Instructors make every point clear, regardless of the space required to accomplish it ; but at the same time every paper is made as concise as the nature of the subject will permit.

Simplicity Secured at Any Cost. Our Instruction Papers are written in clear, simple language, as free as possible from technical terms. Illustrations, wherever they will make the text plainer, are used freely. Great pains are taken to make the construction of sentences, the paragraphing, punctuation, etc., such as will not only make the meaning of the author clear, but will make the paper easier to study. The plan of simplicity was adopted because things which are stated in simple language are more readily comprehended by all.

Careful Preparation and Revision. The aim kept in view in the preparation of our Instruction Papers has been to make them thorough, modern, and plain. We are constantly revising our texts, some of which are in the fifth edition.

Every student receives, when he enrolls, a complete duplicate set of all the Papers in his Course, fully indexed and bound in volumes for use as a reference library.

System Thorough. The student masters each Instruction Paper in order, and his work is examined and passed upon by the Instructors, subject by subject, as he completes it. The student must be thorough, as he cannot advance unless he is proficient in preceding lessons. He therefore learns thoroughly as far as he proceeds. Our system thus overcomes the greatest objection to self-education by textbooks, night schools, etc.—i. e., that many of those compelled to resort to such aids to self-education read or study on so desultory a plan that they learn few things thoroughly.

Particular Attention to Backward Students. We make our students do their work as it ought to be done, allow no medium papers to pass, and correct every error. When the answer papers are examined we even correct and criticise the punctuation, capitalization, spelling, and penmanship. The poorly written, poorly expressed paper receives as careful examination and consideration as the good one.

COMPARED WITH REGULAR SCHOOLS.

Our Schools are not intended to fill the place of regular schools, but there are, nevertheless, some respects in which our method of teaching is superior to all other systems.

Correspondence Lessons Require Close Attention. In any class lecture the attention may be drawn away by the surroundings. Oral explanations cannot always be grasped and retained in the memory as they are given, and while the student is thinking over a portion of the lesson, the teacher may get ahead of him ; and if he loses part of the lesson, he cannot understand the remainder. The directions and instructions given are general, and the student oftentimes fails to get assistance on the point which, in his case, is most necessary. On the other hand, every part of a correspondence lesson can be read time and again.

Nothing Interrupts the Work. There are no vacation seasons. Nothing interferes to interrupt the work of the student. Studies can be interrupted whenever necessary, and resumed when convenient.

Books, Transportation, Board, Etc. Saved. Our charges are much smaller than for similar courses in the regular schools. In addition, the student saves transportation to and from the school, board, and other expenses while there, books, etc.

Any person who wants to learn can do so by the correspondence method. Instruction can be imparted with as great facility by it as by any other means, and many learn by it who cannot be instructed in the usual way.

Competent Instructors. In The International Correspondence Schools students are taught by the ablest Instructors it is possible to procure, men of education and of large experience in the branches which they teach. These are assisted in the preparation of the Instruction and Question Papers by the ablest specialists in the country, who are employed expressly for the purpose.

MUCH BETTER THAN HOME STUDY WITH TEXTBOOKS.

Cheaper. A course in our Schools is much less expensive than home study with textbooks. It would cost hundreds of dollars to purchase books to cover the theory of a profession and the sciences related to it. Our students require no textbooks except the Instruction Papers, which are furnished free of charge.

Every student, however, receives when he enrolls a complete duplicate set of all the papers in his course, fully indexed and bound in volumes for use as a reference library. These, taken together, form a complete series of textbooks in the theory of the profession to which they relate.

Provides an Order of Study. Textbooks are countless in number, and many contain matter which is of little use, and unless the student has the assistance of some experienced person to point out what it is advisable to read, and what may be left alone, he will do much unnecessary reading and lose valuable time.

Every Home a School-House. The system of The International Correspondence Schools, by calling to its aid the fleet messengers of the postal service, meets the peculiar conditions which surround teachers desirous of improvement, better than any other plan. An education in Pedagogy is now within the reach of all. Every teacher may make of his home a schoolhouse, where he can study during his leisure hours and prepare himself for a better position.

Value of an Hour. The teacher who reads and studies most is the most competent, draws the highest pay, and is entitled to and receives the most respect. But no matter how busy he may be, the teacher should remember that it has been the men and women who have been most crowded with work who have done the greatest things in life, and that waste of time for those whose only hope of advancement lies in education means loss of opportunity and of any future rise in life. The man is yet unborn who rightly measures and fully realizes the value of an hour.

A HELP TO TEACHERS.

All Important Data Epitomized.

It is a common expression with teachers, "Oh, I have got all the authorities on the subject in my book-case, and can look up the information at any time." Precisely so; the information is in the book-case, and it remains there, too! Then, when a question arises "all the authorities" are taken down and dusted, and an hour or two devoted to seeing what the authorities have to say, and other hours are wasted in vain endeavor to decide which authority to act on. It is here the great value of our work comes in. We dust the books and consult the authorities, so to speak.

Successful Men Hard Students.

The most successful teachers are the hardest students. No one can afford to stop studying when he leaves college or normal school. When he commences the practice of his profession he finds that he needs to know thoroughly many things which he studied indifferently, and soon forgot, as well as many other things which he did not study at all. In order to be successful he must study.

There is no safe stopping-place; the world continually moves forward, and a man must either keep up with the procession or fall behind. The intense fact of human life is change—movement; a man must move, and unless he moves forward he will move backward. Study is the only sure protection against mental rust and retrogression.

SUITED TO THOSE OF MATURE YEARS.

No One Too Old.

A word to those who think they are too old to learn. It is a fact that a boy's brain does not attain its maximum size until he is about sixteen years of age, and that it does not mature until he is twenty-five. His physical powers do not mature until he is about thirty-five, and eminent authorities believe that a man does not attain his intellectual prime until he is forty-nine or fifty years of age, and that the best years of his life for study or work are after he has passed his fiftieth birthday. A famous Greek historian did not begin to study Greek until he was nearing the allotted span of threescore years and ten. Isaac Walton wrote some of his best works after he was eighty-five. Hobbes, at eighty-seven years of age, translated the "Iliad."

Average Ages of Our Students.

The average age of our students is almost twenty-seven. Nearly a third are over thirty, several thousands are over forty, and a number are over seventy years of age. It will thus be seen that age has nothing to do with it. It is merely a question of determination to make something of one's self.

The Ripened Intellect Grasps Quickly.

The best time to learn the A-B-C's and such simple things as require less the exercise of the reasoning faculties than child-like faith in what we are told, is when we are young, because then there is nothing else we can do. However, a man of forty years can learn to read as easily and as quickly

as a child of five. At his time of life his intellect is ripe and his mind in better condition to study larger things. *But it is in condition to study anything*, and it is only necessary that he form habits of application and logical thought to successfully study any scientific, technical, or other subject.

A METHOD OF INSTRUCTION ESPECIALLY ADAPTED TO THE NEEDS OF THOSE LIVING IN ISOLATED LOCALITIES.

Especially Suited to Teachers in Isolated Localities. The correspondence method of instruction used by The International Correspondence Schools meets the requirements of teachers in small villages and country towns having few educational advantages, who desire to educate themselves, but by reason of the isolated localities in which they live, are prevented from attending advanced schools. Each student participates equally in the benefits of the Schools, no matter how much he is isolated from the others.

By Our Method the Student Does Not Require to See His Teacher. The question is sometimes asked, "How can a man learn without seeing his teacher?" He does not require to see his teacher, for the teacher writes to him, if necessary, every day, giving detailed information by letter in full explanation of every difficulty he meets with in his lessons, and he learns from these and from his Instruction and Question Papers as well as if the teacher were present.

Proof that We Can Successfully Teach Those Living at a Great Distance. That our Schools fully meet the wants of those living in isolated localities is proven by our large enrollment, which represents all parts of the civilized world. We have students in the villages of Alaska and the far West, in distant military posts, in the life-saving stations of the seacoast and the great lakes, and other equally remote sections of the United States.

Students in All Parts of the World. The Schools have many students in foreign lands. In South America, Europe, Asia, Africa, Australia, Tasmania, and the Hawaiian Islands; wherever the mails go, The International Correspondence Schools are furnishing instruction to many who live in such isolated localities that they could not educate themselves in any other way.

Many Students in the U. S. Navy. Many students of the Schools in the United States Navy are studying as successfully on shipboard as if they were ashore. Although the men-of-war to which they are attached are sent to all parts of the world, the postal service, through the United States Consulates, enables them to keep in touch with the Instructor, and they receive the same careful attention as their fellow-students on land.

RULES FOR ENROLLING.

Application Form. Every student on enrolling must sign an application form which will be supplied to him. In this application he binds himself to treat as confidential the Instruction and Question Papers furnished by the School, and not to divulge their

contents to any person not a holder of a similar Scholarship, under penalty of forfeiture of the Scholarship. Treating the papers as confidential means that only the student in whose name the Scholarship is made out shall use them to study from.

How to Enroll.

To enroll, it is only necessary to fill out the application form and send it to us with the full price of the Scholarship, if you desire to pay in advance, or the first payment if you prefer to pay in installments, and immediately upon receipt of the application properly filled out, accompanied by the money, you will be enrolled as a student and your first work forwarded to you.

No reduction in the price of Scholarships is made because the person wishing to enroll is already well informed in one or more of the subjects of the course in which he desires to enroll.

Certificates of Scholarship Are Agreements to Give Instruction Until Student is Proficient.

We issue to every person who purchases a Scholarship in The International Correspondence Schools, *as soon as we receive full payment*, a Scholarship Certificate. These Certificates are agreements to give instruction to the student until he is proficient in the branches included in his Scholarship, and has received his Diploma, no matter how long it may take.

We do not cancel Scholarships or refund money paid for them.

Instruction and Question Papers are not sold or furnished to any except those receiving instruction in accordance with the plan of the School.

Bound Volumes of All Papers Furnished Free.

In addition to, and independent of, the Instruction and Question Papers furnished to students to study from, we send to each student when he enrolls, without extra charge (except for expressage or freight), a complete duplicate set of all the papers in his course, fully indexed and handsomely bound in volumes, which he can use as a reference library, and which will be of great value to him in his work while going through his course.

THE PRICES OF SCHOLARSHIPS.

The Courses Cheap at Ten Times the Price.

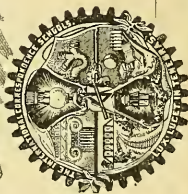
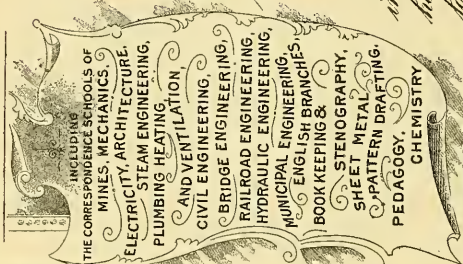
The prices of Scholarships vary according to the number of subjects and the expense in teaching them in the different Courses. They are cheap at ten times the price asked, but are purposely made low so that all who are ambitious to obtain an education may do so. The cost of a Scholarship in The International Correspondence Schools is even less than the cost of the textbooks which a student must have in pursuing the same studies in a regular technical School.

Payment May be Made by Installments.

For the convenience of those who wish to pay for the Scholarships in small amounts, we accept payment in monthly installments.

Students in our Schools are not obliged to buy any books whatever. The Instruction Papers are complete textbooks.

Class Letter and Number.



THE International Correspondence Schools

SCRANTON, PENNSYLVANIA.

Plains to Cora that Mr. *John Smith*
of *Washington* D.C. has purchased one

Pedagogue of English Branches
SCITON ARSETH

in The International Correspondence Schools, entitling
him to Instruction, subject to the conditions stated in his application
for the same, until he has completed the course of study and been
awarded a Diploma.

Witness the Seal of The Colliery Engineer Company and
the Signatures of the President and Secretary, Date 188

Harry P. Allen
Secretary

August Foster
President

THE COST OF PAPER ON WHICH TO WRITE THE ANSWERS TO THE QUESTIONS.

Students Must Use Light Paper. The student supplies himself with foolscap paper on which to do his work. As the price of the postage increases with the weight of the paper, it is advantageous alike to him and to ourselves for him to use as light paper as possible.

Prices of T. S. Co. Paper. The Technical Supply Company, Scranton, Pa., will furnish good light linen paper, $13 \times 8\frac{1}{2}$ inches at the following rates :

100 sheets by mail (postage paid)	\$0.45
250 " " " " " "	1.15
500 " " " " " "	2.25
100 " " express (purchaser to pay expressage)	0.30
250 " " " " " "	0.80
500 " " " " " "	1.50

Students can order directly from them or through us, *but they are not required to do so.* If they buy elsewhere they are requested to buy light paper of good quality, as it makes a considerable difference in the postage.

THE POSTAGE TO SEND THE ANSWERS TO THE SCHOOL.

The work of the students is sent to us in sealed envelopes (which we furnish) as "first-class mail matter," the rate for which is two cents for each ounce or fraction thereof, prepaid. It is a violation of the postal laws to send it as "third-class matter."

Average Cost for Postage. The postage bill of the average student is about one-tenth of the price of his Scholarship.

The School pays the postage on the Instruction and Question Papers, and all other communications sent to the student, and furnishes him with envelopes and information blanks free of charge.

DIPLOMAS AND CERTIFICATES OF PROFICIENCY.

What the Diplomas Are. Diplomas and Certificates of Proficiency are issued to students completing all the subjects of the courses who pass the final examination. These Diplomas and Certificates are the legally authenticated declarations of the Instructors of the Schools that the holders thereof have successfully completed the study of the subjects named, and have satisfied them of their proficiency therein. They do not carry with them degrees.

How Granted. They are granted on final examination papers answered by the student after he has completed his studies, before a witness if it is considered necessary to appoint one. The student's answers to the final examination papers become the property of the Schools, and will not be returned.

High Standard Maintained. A high standard is maintained for the Diplomas and Certificates of Proficiency of The International Correspondence Schools by only issuing them to those who have faithfully passed through the courses and proved by the final examination that they are entitled to possess them.

The Final Examination. We do not bind ourselves in our Scholarship Certificate to give a Diploma or Certificate of Proficiency when the student has passed through all the subjects of a particular course of study, but we do bind ourselves to instruct until the student is qualified to receive the Diploma or Certificate. If a student after completing a course is found, on final examination, not to understand the subjects well enough to qualify him to receive a Diploma or Certificate, he is required to review the whole course or the branches in which he is deficient, and he is kept reviewing until he satisfies the Instructors that he has a good knowledge of all the subjects in the course.

Under no circumstances are they issued to undeserving persons, so that to hold one is of itself evidence that the holder has been a faithful student and possesses the education claimed.

THE CORRESPONDENCE SCHOOL OF PEDAGOGY

TEACHERS.

Are you ever brought face to face with problems which you can solve in only one way?

Do you have dull pupils whom your method of teaching does not reach?

Do you ever experience those trying moments, which come to all conscientious teachers, when you feel that you ought to give up on account of your paucity of ideas?

Do you ever wish that you could have at your call the friendly advice, rich in helpful devices and expedients, of experienced masters of the art of teaching?

WE CAN HELP YOU.

Need of Variety of Methods.

A great need felt by all teachers is a variety of methods in presenting the subjects they teach. The textbook they use gives but one or two ways, of showing how to do a given thing, and may be the sum and substance of their knowledge of the subject. The college, normal school, or high school, at which they studied, probably worked along one method of presentation which may not have been the best. But even the best does not appeal to all minds. Pupils think differently. They see the same thing in various ways, according to the bent of their minds. What is plain to one is obscure to another. No one method will enlighten all minds. The bright boy is bright because the teacher's explanations have appealed to his way of thinking. The average boy would be the bright one, if the teacher could touch the chord to which his nature responds. The dunce is dull, often because nothing the teacher has said has lighted the flame of interest in his mind.

Difference in Pupils.

Getting the Pupil's Interest.

How to get at the pupil's mind is the great problem of a teacher's professional life. Mind only can influence mind. To the average student, textbook explanations seldom explain successfully. Until students are considerably advanced in age and learning, printed thoughts are of little value in leading them. Only the teacher's mind is capable of inspiring them to intellectual growth. Only the teacher can make the thought comprehensible to the pupil. There must, of course, be a uniform system in our schools. But while there is need of the system best adapted to the average pupil, yet its application is in the hands of personal teachers, whose personality adjusting the application of the system to the pupil, is all that saves it, good as it may be for the average, from wrecking the intellectual life of all the bright or dull ones, who are not average.

Selection of Methods. The teacher, then, must be equipped with a variety of methods, and should know poor ones as well as good. Poor methods, i. e., methods not adapted to the average, are often the best means for teaching the extremes of a class. A knowledge of such methods, with the reasons why they are good or bad, is of inestimable help to any teacher. They are the means by which the great object of teaching, the enlightenment of every mind in the class, may be obtained. Many teachers are unfamiliar with more than one way of teaching the common English Branches, arithmetic, English grammar, orthography, geography, United States history, and United States civil government. To help these teachers we have obtained the services of some of the most experienced textbook writers in the country in these branches. They have gone through the best standard works on education, and textbooks, collecting from each the best and presenting it in our Instruction Papers in such condensed and simplified form as to be most useful to teachers. They are men of liberal education and of years of practical experience in teaching and superintendence of school work. They know exactly what teachers need to learn to make themselves most useful, and have given this in the Instruction Papers, omitting all non-essential things. There is no teacher who will not be benefited by our Pedagogy Scholarships. We advise all who are teaching the English Branches to take a course. It will be money well invested.

THE TEACHER'S WORK.

Important Duties. If practical, earnest men and women could measure results and compute percentages of "profit and loss" in mind and morals, the successes and failures of teachers would form the most important and interesting statistics to be read anywhere. On no class of workers falls so important a duty to society and the public welfare as on the teachers. "For in the name of the living God," says Horace Mann, the first great educator of the New World, "it must be proclaimed that superstition shall be the religion, that licentiousness shall be the liberty, and that anarchy shall be the law of that people which neglects the education of its children." The coming generation that will make or unmake our cities, our states, and our country, already "fills the air with its babble, its laughter, and its little cries." The duty of the state, through the teachers, is to see that these children shall not, by lack of care, slip and fall in the paths of ignorance and crime; that they shall not wander into vice and misery; that few of them shall swell the army of open or secret criminals, upon whose number depends the fate of any nation.

Statistics. One-fifth of the entire population is at school. In 1894 there were 15,930,268 pupils in this country, with nearly half a million teachers. Several hundred million dollars are invested in school properties. The total school expenses in one year were \$170,384,173, or \$2.51 for each man, woman, and child in the United States. The average number of years at school runs from 6.32 in the North Atlantic States to 2.88 in the

South Central States. There are about 236,529 school houses, valued at nearly half a billion dollars. There are about twice as many women teaching as men, whose average monthly salaries are, for men \$44.76, and for women \$37.48. Taken from a business point alone, the schools form one of the most important industries of the country and should and do receive attention commensurate with the magnitude of the interests that they represent.

**Character
Develop-
ment and
Educational
Training.**

But the commercial side of school is the least in the scale of real concern to the people. The teacher's true mission is to welcome the "fresh hearts and bright faces, timidly, gleefully, hopefully advancing, singly and in groups, to the school house," and to take the little ones by the hand and "lead them into the pleasant ways of wisdom, virtue, usefulness, and happiness." The chief end of school life is character development and educational training. In our schools the children of rich and poor alike, of Puritan and Cavalier, work together without distinction, except the natural one of ability and industry. No better means exists for destroying the barriers of caste and class, and for the training of character for the duties of good citizenship and a proper regard for, not only the rights of self, but of those with whom one is associated. The right of the schools to exist is based on their being the most effective means for the making of industrious, intelligent, and upright citizens.

**The Common
School and
Its Influence**

The common school is the hope of the country. Education is the essence of our institutions. Ignorance has as much right to representation as culture, and if the State is to stand, the people who rule must be educated. The common school education is what elevates our masses above the condition of a mob, which, says President White, of Cornell University, "is an illiterate mass of men, large or small. If such a mob has a hundred million heads—if it extends from ice to coral—it is none the less a mob; and the voice of a mob has been at all times evil; for it has ever been the voice of a tyrant, conscious of power, unconscious of responsibility. It passes at one bound from extreme credulity toward demagogues, to extreme skepticism towards statesmen; from mawkish sympathy toward criminals to bloodthirsty ferocity against the innocent; from the wildest rashness to the most abject fear. To rely on a constitution to control a mob would be like relying on a cathedral organ to still the fury of a tornado."

Says President David Starr Jordan, of Leland Stanford University, California, "Long ago, at the end of the war, Edmund Kirke told us in the 'Atlantic Monthly' the story of a brave but unlettered scout, who served in Garfield's army in Southern Kentucky—John Jordan, from the head of Bayne. The story, which was a true one, was designed to furnish a sort of running parallel between the lives of two brave and God-fearing men, supposed to be equal in ability and equally lowly in birth. The one wore the general's epaulets, and late, became president of the United States, known and honored of all men. The other wore the rough homespun of the scout, and now that the war is over, he lies in an unknown grave in

the Cumberland Mountains. And the difference between them, so the story tells us, lay in this: The free schools which Ohio gave the one, and of which Kentucky robbed the other. 'Plant a free school on every Southern crossroad,' says Edmund Kirke, 'and every Southern Jordan will become a Garfield. Then and not till then will the Union be redeemed!' No country is well governed in which any one is 'prevented either by interference or neglect from making the most of himself.'"

**The Teacher
is the Hope of
the School.**

If the common schools are the hope of the country, the teacher in a larger sense is the hope of the schools, and thus the mainstay of our institutions. Upon the qualifications of the teacher depend the strength, the influence, and the future of the schools. Every school is what the teacher makes it. To "kindly and wisely gather up the wild and changing humors of childhood and youth, and without subduing the spirit or abating the ardor, to unite them in one grand earnest purpose of life is not the work of a novice or a trained dullard." It requires men and women who will be as great as their opportunities will let them. The first great uplift in educational matters in this country came from the burning words and enthusiastic work of Horace Mann. Dr. Arnold did the same for England and in less measure for the English speaking race, when he wrote "Tom Brown at Rugby," by showing, almost for the first time, the true relations of teacher and pupil, the teacher "a man, noble, scholarly, humane, gentle in the best sense of the word; the pupil, instead of being his natural enemy and providential tormenter, his loving disciple and most devoted friend."

**Danger of
Uneducated
Teachers.**

Uneducated teachers, we fear, however gifted they may be, are apt to be narrow, apt to teach error as well as truth. The old-fashioned pedagogue belongs to this class with his birch and his one book, and a soul like that of whom Wordsworth tells:

"The multiplication table was his creed,
His paternoster and his decalogue;
For in a close and dusty counting house
He had so smoke dried and shrivelled up
His heart, that when the dirt shall now
Be shoveled on him, 'twill still be dust to dust,"

and whose pupils' farewell song was

"Goodbye, scholars; goodbye, school;
Goodbye, master; and you're an old fool."

**Demands of
the Profes-
sion.**

Teaching is, on the other hand, a high calling, demanding intelligence, tact, training, and the truest manhood or womanhood. One of the great wants of the day is men and women fitted to understand, help, and direct our children in all the paths that lead upward. Our teachers must not be time-servers. If conscientious, thorough work is to be given in any department of life, it must be in the schoolhouse. There is need of men and women, who, after a life work, can, like one of our great men, sign their last paper, "Louis Agassiz, Teacher," who love their work and duty more than temporal things, and will give those in their charge a living example of the high things the school stands for; not that they should make themselves martyrs, but that each one should set the highest example in thought and action that he or she can.

Plans of Work. Not the least of the qualifications of the progressive teacher should be a thorough understanding of methods of work. This is what the teacher needs to appear to advantage in the recitation room; and the recitation room is the focal point of all the school life. It determines "the length and character of the lessons, the manner of their preparation, the conduct of the pupil, his hours of study, his interest in the school, and his regard for his teacher, and gives the color, and the value to all his school days, his waking and his sleeping hours; it makes him a trusty friend or a helpless truant, a student or a scamp, and will ultimately guide him along the paths of honest, successful industry, or into the by-ways of indolence and worthlessness."

Comprehensive Knowledge is Required. The teacher should have a comprehensive grasp of the subject under discussion. Such a knowledge is not to be had from one book, but from many. To have the information required in order to know what is essential and necessary, as well as what is not, to arrange the work so that it leads up from the grades below and reaches on toward those above; to so emphasize each topic that it takes its proper place in the grand plan of education, calls for a knowledge of many authors and innumerable books. The comparison of authorities, the selecting of what is good and the rejection of the valueless is a task quite beyond the average teacher, who is busy and overworked, and does not have much time for outside study. Many of them have not had the experience or the comprehensive education needed to make the results of such an investigation reliable.

The Education Given by Us. If this work should be done for the teacher by men who have had the training, the education, the experience, and the time to do it thoroughly, then the results of their work would be invaluable to the average teacher. Exactly this has been done by the Instructors who have written the various subjects in *Pedagogy of English Branches for The International Correspondence Schools*. Their work marks an epoch in educational literature, and should be in the hands of all teachers who are progressive, and desire to keep their methods abreast of the constantly advancing standard called for by the public.

FOR SCHOOL PRINCIPALS.

Responsibility. The School Principal holds the most responsible position in the whole field of teaching. He comes into contact with the pupils not only in direct teaching, but his influence reaches them indirectly through his teachers and through the parents. His duty is, therefore, threefold—to the parents, the teachers, and to the pupils under his care.

Duty. His duty to parents is the same, whether as Principal of a private school, as he deals with them directly, or in a public school as he deals with them and with their authorized representatives—the Board of Control, the School Board, or the Superintendent of Schools. Expressed in briefest form, it is to render them the best possible equivalent for their money.

Every Principal desires the reputation of doing honest, conscientious, thorough work; it is, in fact, nothing more nor less than dishonest for him to give anything but the best within his reach. He must use every means to attain this end. Thorough work is what people expect from their schools. They are proud of a good school. This, too, is what gives a school reputation, makes people talk about it, and thus advertises it. Showy methods may succeed in business, but in school work they are necessarily short lived. It is a slow process building up a good reputation, but the surest and the only safe one.

**Difference in
Schools.**

The difference between schools lies not in the showiness or expensiveness of their equipments, but in the character and attainments of the men and women that teach in them. They make the school. A Mark Hopkins, a Horace Mann, an Agassiz, a Froebel, or a Thoreau, makes the humblest building a palace and temple of learning. The greatest school in the world was in a small building on a little island in the Atlantic. It lasted only six months, but to it resorted many great and noble minds to study Nature under that master-teacher, Agassiz, whose untimely death cut short its history-making career.

The main duty of the Principal is to give his scholars the best thought and the highest inspiration of character and mind. He and his teachers are models of inspiration or depression, bound to affect the entire lives of the boys and girls in their care. His first care is to himself, to maintain his own efficiency at the highest possible pitch. This he must accomplish by careful study of the best methods, old or new. Principals will find our Pedagogy Scholarships the most condensed, plainest, and most helpful method of attaining the knowledge desired.

**Must Outline
Methods for
Subordinate
Teachers.**

A good Principal will keep his teachers up to a standard of work approximating his own. To accomplish this end, many progressive principals observe their teachers' class-room work, and help each teacher with suggestive personal criticisms. Others lecture to them on methods. Most private schools hold weekly "Faculty Meetings." These meetings usually deal more with discussions of school discipline and *morale* and the progress of individual pupils than with methods of teaching, on the principle that teachers should be competent to do their work without instruction. None of these methods is entirely satisfactory in bringing teachers up to the highest grade of efficiency. This is mainly because the effort put forth in them is more on the part of the Principal than on the teachers whose work is to be improved. It is a well known fact that real progress is proportional to personal effort. If teachers are to be improved in the quality of their work, the burden of self-improvement must be put upon them.

**Our Course
Embodies
Methods of
Ablest Edu-
cators.**

Few Principals have time to prepare such courses of study for their teachers as will be really helpful to them. The preparation of such courses requires a great deal of careful research, the sifting of good from useless matter, comparing of authorities, and compiling their suggestions with one's own

experience. This is what our Instructors have done for the Principals. It will pay any Principal to have his teachers take our courses. In fact, several Principals and Superintendents who have examined them have declared their purpose to have all their teachers take them. They supply a means not to be had in any other way of raising all to a uniform standard. The Principal who does this will find it a paying investment. He will get improved and more uniform instruction. The work of different rooms and grades will be done, as nearly as possible, in the same manner, so that scholars will be spared much of the too common disadvantage and delay of getting used to entirely new methods, as they pass from room to room. There will be less delay in starting new classes, for the teacher, being familiar with what the scholars have learned, their general ways of thinking, and modes of study and recitation, and the discipline of the lower grades, will lose less time in getting classes under way. It will be of the greatest assistance in making the whole school that much desired thing, a harmonious and uniform system, instead of an aggregation of different and often discordant elements.

FOR SCHOOL SUPERINTENDENTS.

- General Supervision.** All that has been said about the duties of school principals applies with even greater force to the School Superintendent. Upon him rests the responsibility of general supervision. He must see to the proper maintenance of the material welfare of the schools; keep up the buildings; see that they are properly equipped; salaries promptly paid; teachers kept harmoniously at work; proper textbooks selected, and suitable schoolroom supplies and apparatus furnished for the different grades and for laboratory work.
- Maintaining the Object and Aim of the School.** But more important than these is the duty of maintaining the object and aim of the schools—the best standard of teaching to be had. The Superintendent should be the leader and guide of all his teachers in pedagogic thought. His prime duty is to lead them, not through fruitless discussions of abstract and impractical ideas, but to a direct comprehension of practical and helpful methods of teaching.
- Instructing Teachers.** His teachers should be instructed in the best general methods of teaching and, in particular, of teaching each branch. He should have a uniform method for each subject, reaching from bottom to top of the grades. He should see that each teacher learns and uses the methods outlined, or at any rate uses such a variety of methods that there will be as little difficulty as possible for pupils stepping from grade to grade.
- By Lectures.** Instruction by lectures is the ordinary way of helping teachers. In the lecture room, however, the teacher's attention may be drawn away by the surroundings. Oral explanations cannot always be grasped and retained in the memory, and, while the teacher is thinking over a portion of the lesson, the lecturer may get ahead of her. If she loses part of the

lesson she cannot understand the remainder. The directions and instructions given in a lecture are general, and the teacher oftentimes fails to get assistance on the point which in her case is most necessary.

By Visits to Classroom. Another good plan pursued by the best Superintendents is to visit each classroom, study the methods of each teacher, then point out her good points, encouraging her in them, and point out poor methods and show her methods which will remedy the faulty ones.

By Written Criticism and Suggestion. A few Superintendents use the following excellent method of instructing their teachers: They make a careful study of the classroom methods of each one, noting excellences and deficiencies; then write, print, and distribute to the teachers, for study and final examination, a pamphlet outlining the methods they consider best, showing good methods in detail, and telling why they are good; outlining things to be avoided and telling why, in each case giving the foundation principles of Pedagogy, or good teaching, that are used or violated.

Advantages. This is the best method because, by having his teachers study his printed instructions carefully, the Superintendent comes into closer contact with them; the instructions are worked out in greater detail; and, by requiring the teachers to pass written examinations, he fixes the subject matter in mind in the most thorough way possible. We remember things we read and then write down better than we do those talked about. This is not because they are read and later written, but because they have to be learned better to be written at all.

Our Course Embodies the Experience and Observation of Able Instructors. This is exactly the method followed in The Correspondence School of Pedagogy. The Instruction Papers are written by the ablest and most experienced teachers and principals, and contain the results of years of study and practical experience in handling and instructing teachers. They are on exactly the principles outlined above. The teacher is obliged to study them carefully, and then pass written examinations on them. She is not allowed to pass, nor to obtain a Diploma or Certificate, unless she attains a mark of 90 per cent. Thus, our Diplomas or Certificates are a guarantee that the teacher has done careful work in Pedagogy, understands thoroughly the principles and methods taught, and is more competent to handle classes successfully than are those who have not taken our courses.

Thoroughness Necessary. The responsibility of improvement thus finally rests upon the teacher. A method such as ours, requiring real study and work on the part of each teacher, is the best. It demands close attention and a thorough comprehension of the subjects studied, because it must be learned well enough to be written out. Of the many ways of learning, none is more certain to produce a thorough knowledge than that by which the learner is required to write out his or her ideas. On this account alone our method is more thorough than any other commonly used to improve the standard of work among teachers.

Value of Uniformity in School Methods.

Uniformity of work is a great desideratum in any system of schools. Just as that manufactory is the best which turns out the most uniform high-grade product, so the same is true of schools. The Superintendent can devise no more certain means of getting a uniform standard of attainments among his teachers than by having them take our courses in Pedagogy.

Means of Obtaining Uniformity.

We would respectfully call the attention of Superintendents to our Scholarships in Pedagogy as the most effective means extant for attaining uniform methods of teaching and a high grade of proficiency among their teachers. They will find that, by having their teachers take such courses as we offer, they can raise the general standard of instruction in their communities better, and with less expense and trouble than by any other way, and will experience less trouble from inefficient teachers. They can overcome poverty of methods, and then have more time to devote to a careful study of the individual needs of teachers, and to helping them make up such minor deficiencies as may, in individual cases, not be reached by our papers.

FOR STATE AND COUNTY SUPERINTENDENTS.**Investigation Courtied.**

The responsibility resting upon State and County Superintendents is similar to that of town, borough, and city superintendents. What has been said of principals and superintendents applies in a larger and broader measure to the former, although their work is largely advisory in its character. To them, we would urge a thorough investigation of our Instruction Papers, our standing and our methods. We know, from past experience, that a fair, unbiased investigation will enable them, as it has others, to see the thoroughness and practicability of our methods of instruction, and to use it in their own and their teachers' work.

FOR PUBLIC SCHOOL TEACHERS.**The Public Schools of the United States.**

We are justly proud of the public school system of the United States. Taken as a whole, it meets the expectations of the people, and is admirably adapted to their needs. In sections where the standard of living is high, the schools are equal to or superior to those of any other part of the world, Germany possibly excepted. Where the people do not appreciate the best things of life, where their ideals are comparatively low, the schools likewise represent the need of education which they feel. Of course, in some sections the schools are not good, but a most encouraging sign is that everywhere the people believe in their schools, wish to see them improve, and, as the need of education is felt, are continually making them better. The schools measure accurately the standard of living in any part of the country.

The superintendence system is a strong factor in raising the general standard of the schools. It is in use in all but four or five States, and wherever it is well developed the schools are good and improving in character. Yet schools may be, and in some places are, "superintended to death" by the *arbitrary* imposition of the Superintendent's particular methods on all the teachers. A certain amount of uniformity is desirable in a system of schools, but not so much as will tend to destroy the individuality of the teacher's work, and reduce all to a dead level, with little opportunity for the expression of the teacher's personality, as is the case in some of the larger cities.

**Personality
of Teachers.**

The public school teacher must see that his individuality is not infringed upon. His whole personality should be thrown into his work to secure the best results. If he thoroughly understands the subject he teaches, he is in less danger of this than if he is imperfectly informed about them. To get the best out of his pupils he must be able to present every subject in the best ways known to the most experienced teachers. It is impossible for him to get all of these from the principal or superintendent, or to take the time for a careful study and comparison of authorities. He can get the information he needs in the most compact form, with least expense and time in one of our Pedagogy Scholarships. Every public school teacher will find a course of study with us a very good investment.

**Need of Meth-
ods as Taught
by Us.**

FOR TEACHERS IN VILLAGES AND COUNTRY DISTRICTS.

**Must be Self-
Dependent.**

The Scholarships in The Pedagogy of English Branches will be of more value to these classes of teachers than to any others, though they are of great benefit to all. The teachers in such districts are mostly young people that have grown up in the place, and have had limited educational advantages. Many of them have been to academies and normal schools, but they have not had the facilities presented in larger places, of classes for teachers and the other means available to enable teachers to keep thoroughly up with the progress of the educational world. The teacher in isolated localities generally has to work by himself in educational matters. The schools are usually less perfectly graded than those in more populous districts, one teacher often giving instruction in all the branches of the primary, intermediate, grammar, and high school grades. For this reason the opportunity of learning modern, progressive methods of teaching, as shown in our Pedagogy Courses by correspondence is especially adapted to the wants of this large class of teachers. They can study at home and have the same advantages as teachers in the cities, without the disadvantages incident to the confusion and rush of city life.

**Our Assist-
ance is Val-
uable.**

**Helpful In-
fluence of
Rural Life.**

Many of our most thoughtful teachers, men and women whose influence is most deep and lasting, and most directive toward high ideals and all that makes for good citizenship, are

found in rural sections. In no other sections can the personal, helpful influence of the true teacher be so near the ideal of the profession. The names of most of the great minds in this vocation, Pestalozzi, Froebel, Comenius, are those of men whose best work was done in the quiet, calm, secluded atmosphere of small towns, or in the country. What city teacher has handed his name down as an inspiration working and felt to the boundaries of the educator's province? Many of us look back to the little country schoolhouse where we received the impulse that started us up the hill of knowledge and has kept us moving on into the realms of wisdom. The conscientious, self-forgetting, and self-sacrificing help of early teachers was the thing that made possible the great lives and the lofty positions of many of our greatest men.

Better than
S u m m e r
S c h o o l s , I n -
s t i t u t e s , E t c .

Our courses in Pedagogy should be taken by every teacher who cannot take advantage of the advanced opportunities of the largest cities. Such teachers feel the need keenly of courses of instruction like ours, and find them an invaluable aid in their regular work. A correspondence course is an excellent substitute, and in many cases, much better than expensive trips to summer schools, institutes, or conventions, and many are certain to embrace the opportunity thus offered by The International Correspondence Schools.

FOR TEACHERS IN PRIVATE AND PREPARATORY SCHOOLS AND ACADEMIES.

Dearth of
G o o d T e a c h -
e r s .

Teachers in these classes of schools are often among the best educated and most cultured to be found. But in no other schools is there such a dearth of teachers thoroughly trained in a variety of methods. These teachers have now come in their work to a realizing sense of deficiencies that might have been made up in school or college. Experience now shows them what they need, and makes it comparatively easy to strengthen their weak points. The training given in schools of this grade tends to be very careful and exact in the advanced branches, to the neglect of the equally or more important elementary ones. The elementary branches have a very important place in the course of study, for the reason that, in learning them, the child fixes habits of study that are either careful and thorough, or the reverse, and that will probably persist through life. Boys that learn careless or purely mechanical methods in arithmetic and the other English Branches are handicapped for exact work in algebra, and particularly for the accurate thought and methods essential to the mastery of geometry, trigonometry, and the higher mathematics, through which they must pass, and upon a thorough knowledge of which may depend their success in professional life.

I m p o r t a n c e
o f T h o r o u g h
T e a c h i n g f o r
t h e Y o u t h .

A r i t h m e t i c .

G r a m m a r .

If they learn grammar in a slipshod way, without attaining an exact knowledge of the subject in all its phases, they will have one of the hardest struggles of their lives in mastering the grammars of the Latin, Greek, and modern languages, a comprehensive knowledge of which is essential to a clear understanding of these tongues.

History.

History is often the bane of the schoolboy's life. United States history is usually the first he learns, and it may, on account of the inefficiency and lack of breadth of his teachers, be a mechanical order of words and sentences, in no way suggesting the absorbing interest that by right belongs to it. If, on the other hand, he learns to look at history as study of cause and effect, to inquire for the causes when he reads of events that must have had causes, and *vice versa*, then he becomes, a student of history, not a mere learner by rote. His interest will not flag when he reaches English, mediæval, or classical history, for in them he will perceive an ever-broadening vista of interlacing chains of cause and effect reaching out in the darkness of prehistoric ages down to our own times.

Civil Government.

Closely allied to history, because based upon it, is civil government. The main outlines of history can be discerned, without requiring a knowledge of civil government, but for the pupil adequately to grasp United States history, he must know what the various clauses of the Constitution mean, how they were determined upon, and how past history is crystallized, and the outlines of our future development are to be seen in the civil institutions, which both environ us and are continually metamorphosing in our midst. The study of cause and effect in this branch is essential to a knowledge of its origin in English and Continental history and governments, and farther back in those of Greece and Rome, whose histories may thus be made matters of living interest instead of the dead matter usually carried for a time in the pupil's mind, to be unloaded for good and all in the final school examinations or those for entrance to college. In view of the popular lack of comprehension of the principles of history and civil government, the early and thorough understanding of them is of special importance to those whose education ends at the school commencement, or earlier. No conscientious teacher of any branch of history can afford to let pass such opportunities for gaining a variety of methods of teaching and studying history and civil government as are given in our Pedagogy Scholarships.

Geography.

Closely allied to the study of history is that of geography. Simple as geography seems to most people, as mere classified knowledge of places, and of land and water formations and products, it is really much more. Upon land and water formations depend, not only material products, but another seldom connected line of products equally traceable to natural formation: to wit, the character and history of man. It illuminates the whole subject of geography to apply the principles of cause and effect, in teaching it; for example, to have the pupils trace how certain geographical formations will induce certain types of character in the people living on them, and will thereby determine, in a general way, their entire history; how coast outlines have determined occupations, or how ocean currents or winds have sped commerce to some favored shores and kept it away from others. Geography is, in fact, a science of history-producing environment, as much as of mere description. Its proper teaching requires a

knowledge of history, commerce, and industry, for the teacher to show the relations between it and these subjects. On the other hand, it calls for an adequate acquaintance with geology and meteorology to enable her to trace the beginnings and causes of present formations and conditions. It is a subject which, from its breadth, cannot be taught by any one person as it should be. But that is no reason why the teacher of geography should not make every effort to acquaint herself with the most comprehensive and progressive methods of presenting it to her pupils, as outlined in *The Pedagogy of Geography*.

Orthography. One reason why there are so many poor spellers among otherwise well educated people is that they have been poorly or carelessly taught. The spelling lesson is one of the hardest of all to make interesting, because of its mechanical nature as determined by the mechanical function of the letters themselves, that of symbolic representation. The repeating of lists of letters which go to make up words is apt to degenerate into rote work and become mere drudgery. Interest must be instilled into this important subject by outside means—the meanings of words, the use of words of cognate meaning, spelling matches, etc. Methods are suggested in *The Pedagogy of Orthography*, which will be helpful to all actual or intending teachers of spelling. The fact that a poor speller is at a great disadvantage in business and professional life makes it imperative that the teacher shall present the subject in the many effective ways outlined in our course. The work of the teacher is often judged by the ability of his pupils to spell.

FOR PRIVATE TUTORS.

Need of Pedagogic Training. No teacher is so likely to be called upon to teach every subject in the whole field of knowledge as the private tutor. Consequently upon no one devolves the duty of thorough preparation in all branches as much as on him. The respect in which his pupils hold him is apt to be proportional to the knowledge he has of the subjects he teaches, and more particularly to the excellence and variety of methods at his command. Method is often conspicuously absent in the work of this class of teachers. His intimate relations with his pupils enables him to become thoroughly conversant with his methods of teaching, and if he proves to have but few methods and to be not progressive and up-to-date, his pupils do not show the results of careful training and may disappoint him in advanced work or after they leave his care. The classroom teacher can silence the instinctive protest of scholars against poor teaching, but the private tutor does not have the rod of discipline at command. Of all others the success of his work lies in the manner of the work itself. The variety, suggestiveness and practicability of the methods given in our *Pedagogy Courses* will be a great safeguard to any private tutor and will prove of much value in all his work. Private tutors will find this one of the best investments they can make.

FOR TEACHERS IN NIGHT SCHOOLS.

The Help to be Derived. Teachers in night schools or institutions of similar character will find the courses in Pedagogy a decided help in presenting subjects in the clearest and most concise manner. They can get ideas from them that they could not otherwise obtain without the most painstaking search through, and comparison of, many authorities and standard books, many of which are not accessible to the average teacher, and are not to be had in public libraries.

This class of teachers will also in most cases be benefited by some one of our technical courses, a list and description of which are given in this Circular. We should be glad to communicate with any such, and if they will tell us what the requirements of their positions are, we can make suggestions as to what courses they will find most helpful.

FOR TEACHERS IN MANUAL TRAINING SCHOOLS.

Technical Courses. Like teachers in Night Schools, teachers in Manual Training Schools will be helped not only by our Pedagogy Scholarships, but also by other Scholarships. Teachers of this class will be particularly benefited by the courses in technical subjects allied to the branches they are teaching. The subjects taught are presented in brief, clear, and simplified form. Formulas are worked down to forms less complex than can be found in any other works. The Instruction Papers in bound form—the Bound Volumes—are complete treatises of the essential things of the trades or professions they discuss. No Manual Training teacher can afford to miss the opportunities for self improvement which our Schools provide.

FOR COLLEGE STUDENTS.

Importance of Small Things. The college student who intends to teach must remember that, while at present he is dealing with subjects and things that develop his *own* mind, when he gets out at work developing younger minds than his own, he will have to understand in detail all sides of every subject that may come within his province as a teacher. The day is coming when he cannot afford to despise small things. A thorough understanding of the lower branches is a good grounding on which to base work in the higher. If he understands these thoroughly, he will know the steps up which his pupils came before they entered his classroom, and, knowing their previous training, will be a more efficient guide than if he knew only the branches he is to teach. The best preparation for teaching is to learn completely, not only the particular things he is himself to teach, but also the subjects above and below. He then knows what things the child has learned that bear on his present

teaching, and also what in his teaching needs emphasizing to prepare the pupil for the subjects he is to take up in the future.

Teaching Related Subjects.

The time to learn these things is while at college. The college student has plenty of time to learn his appointed lessons, and also to get a thorough understanding of related and subordinate branches, and if he expects to become a successful teacher he must do this. For instance, if he expects to teach algebra with success, he must understand how to illustrate algebraic processes by means of the processes of arithmetic familiar to the pupil, and he should know geometry, trigonometry, physics, etc., well enough to be able to point out to his pupils what in algebra needs to be emphasized on account of its value in these subjects. If he is to maintain interest in the classical languages, and compare the beauties of the ancient languages with those of his own tongue, he must know exactly what his pupils have been through in English grammar, and must understand the most modern methods of teaching the latter, as practiced in the best schools.

Greek and Roman History.

To make Greek and Roman history a profitable study, the teacher should understand the general principles of civil government, so as to be able to make a proper estimate of the character of those ancient governments, show their strong and their weak points, the causes of their growth and decline, and to draw instructive parallels between their histories and that of our own country. All this requires a knowledge, not only of the substance of United States history and civil government, but of the methods of teaching them, and of the character and amount of information absorbed by the average schoolboy in his transit through the rooms of the grammar school to those of the high school, academy, or preparatory school.

In view of the general lack in colleges and school courses of really practical instruction in the pedagogy of special branches, the college student will find it of advantage to get such an insight into the most practical and advanced methods of teaching the common branches, as is given in *The Correspondence School of Pedagogy*. Moreover, in his first years of teaching, the college graduate is by no means sure that he will be called to teach the advanced branches only. It is more than probable that he will have to handle the very branches touched upon in our various Pedagogy Scholarships.

Keeping Within the Scope of a Pupil's Mind.

Unless he has refreshed his memory on methods during his life at college, he is apt to find himself getting his scholars so deeply into subjects as to get them beyond their depth; being used to college work, he is likely to expect too much of them, overshoot the mark, and, from the very abundance and depth of his knowledge, carry his instruction considerably beyond them. Nothing will help him so effectually to guard against this common fault of young graduates as a careful review of the common branches, such as is given in our courses; and intending teachers will find a course very profitable.

THE TEACHER "WHO KNOWS IT ALL."

Necessity of Study.

Teachers as a class are not likely to consider their knowledge of things something that can not be improved upon. The very nature of their work dealing with first principles and knowing that the science and the art of teaching are not less progressive than other lines of work, makes the feeling common that the teacher, of all other workers, must study continually to keep up with his profession. No man or woman who *was* competent and thoroughly conversant with the best methods of even five years ago, can feel certain of being up with the best methods of today. The progressive teacher fully appreciates this fact and is the one who is found at summer schools, teachers' conventions and other places where the science and the art of teaching are studied, improvements are suggested and the greatest help obtained by contact with live minds.

How to Get Out of a Rut.

There are, however, in some communities a few teachers who have not yet felt the necessity of putting forth any effort to put themselves on an equality with others—the majority—who are learning present conditions and trying to keep abreast of the advance. Teachers who assume this attitude are not in the majority, we are thankful to say, but the facts that they exist and are sufficiently numerous to form a distinct, though not a large class, show all others something to be avoided. If this Circular should fall into the hands of any such, we can assure them that no more effective means, and in fact no other means of getting out of a rut without leaving home and going to considerable expense for summer or Normal courses, is to be found than a course in The Correspondence School of Pedagogy.

A GOOD WAY TO USE VACATIONS.

Long Vacations.

School work, with all its attractiveness to the true teacher, has its disadvantages. One of these is the long vacations. An ambitious man or woman finds it one of the drawbacks to the teaching profession to be out of work for three months out of twelve, with almost no opportunity to use the time to earn money or make himself of greater value in the work. The long vacation is a period of increased expense, without sufficient counterbalancing advantages. It is true that the stress of schoolwork makes a rest imperative, but the first few weeks of the vacation are usually sufficient. Energetic teachers usually feel that the remainder of the time is apt to be practically wasted, so far as it relates to advancement.

Summer Schools and Conventions.

Summer schools offer an opportunity for self-improvement, of which many take advantage. This is one of the best means offered for this purpose. But the expenses connected with such courses are usually too great for any large proportion of the teachers of the country to use them. Railroad transportation, hotel, and other expenses incident to residence at the places where summer schools are held, put this kind of study out of the reach of many. Only the best paid teachers

can, as a rule, go to the summer schools. Those who receive small salaries, and who really most need the kind of instruction given, are the least able to get it.

Features of Our Courses. For these teachers our courses in Pedagogy and other branches offer a most valuable method by which they can make a careful review of their work, and post themselves on up-to-date methods. There is no other method available to many teachers of systematic, thorough study under the direction of competent instructors, except by correspondence. We would advise every teacher who wishes to make profitable use of his vacations to make a thorough investigation of the correspondence system of study in Pedagogy, or in any of the branches which enter into the province of school work. We invite correspondence, and will be glad to furnish any teacher with names of persons in his vicinity who have taken our various courses, and can give a good idea of the work of our Schools.

Advantageous Use of Long Vacations. Students at school or college will find a course by correspondence a good way to make use of the long vacations. A few hours a day will enable a student of average ability to complete a course in the three months of a summer vacation. He then returns to school with his mind fresh, bright, and by no means exhausted by the summer's work. To those who intend to make teaching a profession, or even a temporary work after getting out of college or school, and while waiting for an opportunity to enter something else, our Course in Pedagogy furnishes a valuable and thorough course of preparation. Other courses can be taken that will be a direct help in after life, or will have the immediate and practical effect of enabling students to abridge their school or college courses, or to take more subjects while at college. Many students have been enabled to save an entire year at college by taking our courses.

PEDAGOGICS OF ENGLISH BRANCHES SCHOLARSHIP.

Theory
Versus
Experience.

Most of our pedagogical works are written by *doctrinaires*—people that have had no personal experience to exemplify and confirm their theories of teaching. The editors too, of many of our educational periodicals are incapacitated for their work by a similar inexperience. Even the celebrated “Committee of Fifteen” contained several members that had never done anything but *theorize* about education. The authority of men such as these is fortunately only temporary; but while it lasts, it is measured by their skill in juggling with strange and learned words, and by their apparent niceties in metaphysical refinements. To them we are indebted for the volumes of learned rubbish that have been written about “Apperception,” “Correlation,” “Coordination,” etc. The fact is, that, in teaching, as in everything else, we *learn to do by doing*—we *learn to teach by teaching*, and he that by this means has learned the art of teaching successfully, may tell in a plain straightforward way the story of his experiments, with their successes and failures, and the principles deduced from them.

But this story with reference to teaching of any one subject, cannot profitably be made to cover several hundred pages, as must be done, if the book is to be issued by any ordinary publishing house. In this latter case, much “padding” is necessary, and that inevitably defeats the proper object in view. The inexperienced teacher can get nothing of practical value from all this amplification and refinement. All this “New Education” verbiage is useless to him; what he specially requires is that some experienced teacher or principal or some capable superintendent shall tell him in a simple way just what to do and what to refrain from doing, and make clear to him the reasons why—the underlying principles.

This is just what our “Course in Pedagogics” contemplates. It describes, in a plain and direct manner, the details of the best methods to be pursued in teaching the common school branches. And, since in none of our courses is it allowable for any author to indulge in fine writing, “padding,” or in metaphysical refinements, he must be able to tell “a plain unvarnished tale,” or his work is rejected.

PEDAGOGICS OF ARITHMETIC.

Variety of
Methods.

It is a well known fact that if there are several paths along one of which a current of electricity is to travel, that one will be the “line of least resistance.” Among the various ways in which almost anything may be done, there is always an

easiest way—a method of least effort and greatest efficiency. This is the case in a marked degree in the profession of teaching. Here method is everything. More teachers fail entirely or are only mediocre from employing faulty methods, than from any other cause, and there is no subject in our school studies that may be handled so well and is really handled so badly as arithmetic. Realizing this, and believing that inexperienced teachers can be aided so as to become expert in their work, the Schools have caused to be prepared a paper in which all the helpful devices known to the most skilful teachers are explained and illustrated. Nearly every treatise extant in the English language professing to do this deals only in generalities that embarrass more than they help the student. What a teacher of limited experience needs most of all is to know exactly, down to the minutest detail, how an expert handles particular subjects in teaching arithmetic. This is what our course furnishes. It presents a great variety of methods and devices, and suggests drills that are indispensable in early work in this subject. It contains nothing that has no definite object. The drills in the fundamental rules and in fractions are not meaningless and purposeless exercises, but are designed to make pupils proficient in what must be done in actual work in those subjects.

Psychology. The subject of psychology in so far as it reveals the order of development of the various mental faculties is presented in a manner easy to comprehend, and is divested so far as possible, of the technical terms which must necessarily be employed in the best methods in teaching these subtleties. Sir William Hamilton's classification of the cognitive faculties has been followed, it being perhaps the best and simplest that has so far been made.

The important report of the Committee of Fifteen has been introduced and discussed so far as is needful to reveal what is meant by study values, correlation of studies, apperception, order of development of the faculties, and many other matters of interest and importance to the teacher.

A strength and confidence that comes from the certainty that we are in possession of the most modern, most approved, and best information that bears upon the work we do, is of incalculable value, and this is especially so in the profession of the teacher. We regard this Instruction Paper as one of the most important and practical among the hundreds making up the great variety of Courses furnished by our Schools.

PEDAGOGICS OF GRAMMAR.

Variableness of Opinions. When Sir Isaac Newton invented the branch of mathematical science that we now call *calculus*, he named it *fluxions*. This was because the species of quantity with which it is chiefly concerned is not constant but *variable*. But, if any subject of human investigation deserves a name indicative of instability and uncertainty, it is English Grammar. No two people that

Principal
Value of
Grammar.

know, or think they know, this subject, can agree about it. Like metaphysics, it is something to think and reason about—not a matter to be reduced to a science and settled once for all. It is recognized among educators that no one speaks the English language any better for having studied English grammar. It is chiefly, if not solely for the excellent discipline it furnishes, that the subject is regarded as so important in a scheme of education. No other study so sharpens the powers of discrimination and improves the ability to detect resemblances, and differences, and to formulate nice shades of meaning. It is perhaps undesirable that grammar should ever be any more nearly an exact science than it is now, and it is certain that it will not be. It furnishes, and always will furnish, the best possible mental gymnastics. So many diverse views are held about this subject by writers that the teacher is compelled either to follow slavishly a particular textbook, or to think for himself. If the teacher is a thinker he will make thinkers of his pupils.

Our Paper on the Pedagogics of Grammar is not intended as a textbook on grammar. Its purpose is twofold :

First.—To indicate a line of treatment of the various topics making up the subject that it is believed will yield the best results to the student. In doing this many approved devices are explained and illustrated and many matters that are usually neglected are suggested and emphasized.

Second.—Many questions are discussed about which every teacher should think, and if possible bring his pupils to think. Among these are the processes of approximation and elimination in arriving at the exact meaning of words, the doctrine of degrees in the expression of quality, the law of the inverse ratio in the *extension* and the *comprehension* of common terms, the treatment of the verb in general and of the irregular verb in particular, tense in relation to mode, the best usage of *will*, *would*, *shall*, *should*, etc.

This Paper is regarded as one of the most helpful that is sent out by our schools, and is unlike anything else that has been done in this country to aid the teacher of grammar.

PEDAGOGICS OF HISTORY.

Why History
is Poorly
Taught.

In perhaps no other civilized country is history so poorly taught as in the United States. This fact is owing to several causes among which are the vastness of the subject and the consequent difficulty of preparing a textbook having unity and interest. Another cause is that no attention has so far been given to the question of methods of teaching the subject so as to render it of real value, and the study of it a source of pleasure to the student. Almost nothing on the Pedagogics of History is to be found in the English language. The Germans have an extensive literature on the subject but unfortunately few of our teachers are able to avail themselves of this source of information.

The purpose of our Instruction Paper is to describe minutely the various plans of teaching history, making specially prominent the method pursued in the schools and gymnasia of Germany. This method has been the result of much discussion and experiment by thoughtful educators of that country, and is there uniformly employed. No one is permitted to teach history or any other subject in the government schools without professional training. In our own country, however, history is regarded as something that anybody can teach, but the fact is that one of the rarest of accomplishments is to teach it skilfully. It is a matter upon which more labor and preparation must be expended if success is to be attained, than upon any other.

Importance of History.

Its importance as an element in the highest type of citizenship makes its neglect by teachers almost a crime against this country. This Paper is intended not only to inform the teacher of approved methods and useful devices for classroom work but also to guide the teacher in self-preparation. School authorities are insisting more and more upon professional training, and the time is not far away when no one lacking special preparation will be permitted to instruct our children. To such teachers as desire to *grow*, to become more skillful, and to secure better pay for better work from year to year, this Paper is commended.

PEDAGOGICS OF ORTHOGRAPHY.

The Need of Previous Preparation.

The belief prevails among teachers that certain subjects in our courses of study may be well taught without previous preparation by the teacher. One of these is the spelling of English words. No assumption can be more erroneous. These subjects that are regarded as so easy to teach are the very ones that are the most difficult, and they are badly taught without the teachers knowing it. We all remember the long lists of polysyllabic words that no exigency of later life would even require us to use. Eleemosynary, hyperbolical, consanguinity, circumstantiality, synodical, heliocentric, syzygy, hydropathic, these are samples from the repertoire that helped to break the monotony of our boyhood life. The spellingbooks of that time were filled with words whose only reason for being there was that they are hard to spell.

This work discusses and illustrates the principles that should determine the choice of words for spelling and definition, and the approved methods of teaching the meaning of words, the reasons for and against phonetic spelling. It contains a helpful presentation of the subject of homonyms, antonyms, and synonyms, with abundant lists of illustrative examples. The methods of utilizing the principle of means and extremes in the meaning of words, and of arranging words in series with respect to their degrees of meaning. A brief sketch of Volapük—the universal or world-language—is given. This should be of special interest to teachers that have looked into the subject of a theoretically perfect language. Another feature of much

interest and value to the teacher is the treatment of collective nouns, for in this Paper the subject of orthography is treated as being really a part of grammar, and a preparation for the study of grammar. Many other matters, such as phonics, capital letters, the latest theories about compounding words, prefixes and suffixes, word analysis and derivation, and diacritical marks are contained in this course. The teacher that studies this work will be more than ever impressed with the conviction that the teaching of a subject apparently so simple as spelling requires skill and preparation.

PEDAGOGICS OF GEOGRAPHY.

Progress.

One of the most comprehensive facts in the history of the human race is progress. We are not content with doing things just as our fathers did them. Discovery, invention, division of labor, education, and numerous other elements have evolved from the hard and crude industrial conditions that existed fifty years ago the wonderful state of things that now obtain. In the profession of teaching as in every department of activity is this improvement noticeable. Its matter and method, and its general facilities for thoroughness have undergone a revolution. The division of labor led first to the graded schools and later to teachers for special subjects. Even so recently as twenty-five years ago, if a pupil could bound the various political divisions, give their capitals and chief cities, and describe their principal rivers and mountains, he was regarded as having learned all that is important to be learned about geography. But when questions of educational values came to be considered by teachers and educators, it gradually became clear that such geographical knowledge has no value either as a means of discipline or as a part of the lucrative science. It was soon discovered that the Earth is a planet revolving about a Sun that lights it, warms it, and determines the development of animal and vegetable life; that there are air currents and ocean currents that affect man's welfare more powerfully than can any question of mere boundary, capital, or principal city. Geography properly taught is a description of the earth's surface, but in a much more comprehensive sense than was thought of a score of years ago.

Purpose of This Paper.

The purpose of our Instruction Paper on the Pedagogics of Geography is to indicate and arrange the proper subject matter of geographical science in accordance with the consensus of the latest educational opinion. In addition to this, our Paper will contain in detail the latest and best methods and order of procedure for teaching this important and interesting science, and it will explain in what manner and to what extent it should be correlated with other subjects.

Teachers that have failed to get a professional training for their work will find our course so helpful as to be practicably indispensable. We have spared no expense in obtaining for this department of our Schools an intelligible presentation of the most modern educational methods.

PEDAGOGICS OF CIVICS.

Importance of Civics.

The importance of civics to every child that is to become a citizen of our democratic country—to any child, indeed, that is to become a citizen of *any* country—is becoming more and more obvious. The accompanying necessity that the subject shall be taught in the best possible manner is equally apparent. These considerations have led our Schools to prepare a Paper on the “Pedagogics of Civics.” This Paper contains minute and careful directions for teaching the subject, including all the latest and best methods that have been developed from the experience of our most efficient teachers.

Besides this professional matter, the Paper contains a rapid outline of the civics that the teacher should know and the pupil should learn. On account of the growing closeness of dependence of national warfare upon the political intelligence of the citizen, we regard this as one of our most important Papers—one with which every teacher should be familiar.

THE CORRESPONDENCE SCHOOL OF PEDAGOGY.

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We do not send out Instruction and Question Paper for examination. Intending students can learn how they are written and illustrated and the subjects treated in them, from the following sample pages :

Sample Page of Instruction Paper. Subject—Pedagogics of Arithmetic.

24. Short Methods.—The teaching of short methods with any but advanced pupils is perhaps neither wise nor necessary.

The teacher, however, should be familiar with the more useful of them. It is economical of time and effort for the teacher to be able to perform mentally, or very rapidly, examples assigned to the class. Moreover, the teacher begets thereby an increased confidence and esteem on the part of the class.

(1) **EXAMPLE.**—Multiply 2,345 by 729. Also, 2,345 by 936.

$\begin{array}{r} \text{SOLUTION.} \quad 2\,3\,4\,5 \\ \quad 7\,2\,9 \\ \hline 2\,1\,1\,0\,5 = a \\ 1\,6\,8\,8\,4\,0 = a \times 8 \\ \hline 1\,7\,0\,9\,5\,0\,5 \end{array}$	$\begin{array}{r} 2\,3\,4\,5 \\ 9\,3\,6 \\ \hline 2\,1\,1\,0\,5 = a \\ 8\,4\,4\,2\,0 = a \times 4 \\ \hline 2\,1\,9\,4\,9\,2\,0 \end{array}$
--	--

EXPLANATION.— 729 times a number equals 9 times the number, plus 80 times 9 times the number. The unnecessary cipher is omitted.

Again, 936 times a number equals 9 times 100 times the number, plus 4 times 9 times the number. The two unnecessary ciphers are omitted.

(2) **EXAMPLE.**—Multiply 2,345 by 999. Also, 2,345 by 995.

SOLUTION.—

$$\begin{array}{rcl} 2\,3\,4\,5\,0\,0\,0 & = & 1\,0\,0\,0 \text{ times the number.} \\ 2\,3\,4\,5 & = & 1 \text{ times the number.} \\ \hline 2\,3\,4\,2\,6\,5\,5 & = & 9\,9\,9 \text{ times the number.} \end{array}$$

SOLUTION.—

$$\begin{array}{rcl} 2\,3\,4\,5\,0\,0\,0 & = & 1\,0\,0\,0 \text{ times the number.} \\ 1\,1\,7\,2\,5 & = & 5 \text{ times the number.} \\ \hline 2\,3\,3\,3\,2\,7\,5 & = & 9\,9\,5 \text{ times the number.} \end{array}$$

Sample Page of Instruction Paper. Subject—Pedagogics of Arithmetic.

SOLUTION.—

$$23450000 = 10000 \text{ times the number.}$$

$$18760 = 8 \text{ times the number.}$$

$$23468760 = 10008 \text{ times the number.}$$

(4) EXAMPLE.—Multiply 43 by 56. Also, 67 by 54.

SOLUTION.—

$$\begin{array}{r} 43 \\ 56 \\ \hline 2408 \end{array}$$

$$\begin{array}{r} 67 \\ 54 \\ \hline 3618 \end{array}$$



EXPLANATION.—There are three steps in each process.

In the first example,

(a) 6 times 3 = 18; write 8 and carry 1.

(b) 6 times 4 + 5 times 3 + 1 = 40; write 0 and carry 4.

(c) 5 times 4 + 4 = 24; write 24.

The steps of the operation are indicated by the symbols on the right.

Most of the cases of written multiplication in actual business are of two figures by two figures. It should, therefore, be taught in the classroom. The extension of it to a greater number of figures, while valuable to the teacher, need not be taught to the class.

(5) EXAMPLE.—Multiply 734 by 456.

SOLUTION.—

$$\begin{array}{r} 734 \\ 456 \\ \hline 187904 \end{array}$$

Ans.



EXPLANATION.—There are five steps in the operation:

(a) $4 \times 6 = 24$; write 4 and carry 2.

(b) $3 \times 6 + 4 \times 5 + 2 = 40$; write 0 and carry 4.

(c) $7 \times 6 + 4 \times 2 + 3 \times 5 + 4 = 69$; write 9 and carry 6.

(d) $7 \times 5 + 3 \times 2 + 6 = 47$; write 7 and carry 4.

(e) $7 \times 2 + 4 = 18$; write 18.

The symbols on the right indicate the successive steps of the process. This method is applicable whatever may be the number of figures.

25. Aliquot Parts.—The method of abbreviation by

**Sample Page of Instruction Paper. Subject—Pedagogics of
Arithmetic.**

79. Right-Angled Triangles.—Every teacher who has undertaken to make a class familiar with the properties of the right-angled triangle has felt the need of having some method of finding numbers so related that the square of one shall be equal to the sum of the squares of two others. The numbers 3, 4, and 5, and equimultiples of them are well known to be such, but are there any others? This matter has engaged the attention of mathematicians for centuries, with the result that we have many celebrated rules for finding such numbers. Among them are :

Pythagoras' Rule.—Let n = any odd number ; then will $\frac{n^2-1}{2}$ and $\frac{n^2+1}{2}$ be the other two numbers.

Thus, let $n = 7$; then $\frac{n^2-1}{2} = 24$, and $\frac{n^2+1}{2} = 25$; and $24^2 + 7^2 = 25^2$.

Plato's Rule.—Let n = any even number ; then $\frac{n^2}{4} - 1$ and $\frac{n^2}{4} + 1$ will be the other two numbers.

Thus, let $n = 10$; then $\frac{n^2}{4} - 1 = 24$, and $\frac{n^2}{4} + 1 = 26$; and $10^2 + 24^2 = 26^2$.

Euclid's Rule.—Let x and y be any numbers, both odd or both even, such that their product is a perfect square.

Then the numbers are $\sqrt{xy}$, $\frac{x-y}{2}$, and $\frac{x+y}{2}$.

Thus, let $x = 27$ and $y = 3$; then $\sqrt{xy} = 9$, $\frac{x-y}{2} = 12$, and $\frac{x+y}{2} = 15$; and $9^2 + 12^2 = 15^2$.

But the following method, used by the writer, will perhaps be most useful in practice.

Take any fraction and its reciprocal.

The three numbers will be :

Sample Page of Instruction Paper. Subject—Pedagogics of Grammar.

Nearly every author of a work on grammar or language lessons has a scheme of picturing minutely the relations that exist among the words, phrases, and clauses that are united to form sentences. Almost all of these schemes are open to objection, and the difficulties that beset the subject are not easy

1. The (earth) [is] round.
2. (Barabbas) [was] a robber.
3. (Paul), the apostle, [preached] upon Mars Hill.
4. (That the (earth) [is] round) [is] no longer [disputed].
5. (He) [died] >when the (tide) [went] out.

to remedy. Sentences should not be dismembered in analysis, but should be preserved just as their authors left them. Moreover, the scheme of analysis should be so simple as to be easily intelligible. The author ventures to offer the foregoing examples of sentential analysis—examples first and explanation afterwards. It may be accompanied, or not, by the general mapping of sentences, as already explained.

Enough has been given to indicate fully the method of analyzing sentences without dismembering them. Several eminent writers on education insist that this should be realized in every system of diagrams. Doubtless some better method of doing this may be found later; but, for the present, the writer knows of nothing better.

19. Review of Details.—

The *subject* is enclosed in a parenthesis, ().

The *predicate* is enclosed in brackets, [].

Sample Page of Instruction Paper. Subject—Pedagogics of Grammar.

Subordinate clauses are separated from principal clauses by the sign of inequality opening on the side of the principal clause, *Principal* > *Subordinate*.

Clauses of *equal rank* are separated by the sign of equality,

— = — = — > —.

If a subordinate clause intervenes between two principal clauses, the sign of equality should precede the latter.

= — > — < = —.

Independent word or phrase elements are indicated by a wavy line, .

Objects of transitive verbs are shown by two parallel lines below, .

A modified element is marked by an arrow connected by a line with its modifier, ↑.

A predicate noun is denoted by two lines above it. A predicate adjective is shown by a straight line above a wavy line, . These lines may be either above or below the predicate adjective, according to the exigencies of the diagram.

A conjunction is indicated by the sign, +. The same sign is used to represent any other connective, as the relative pronoun or the conjunctive adverb. The additional function of either of these latter may be indicated as explained above.

The writer believes that teachers will find the foregoing a system that will work well in the classroom. At any rate, it will escape the objection that it separates the sentence into fragments that the pupil cannot properly recompose. Professor Bain is especially emphatic in his criticism of those methods of making diagrams that displace the words from their stations in sentences. This method is as readily applicable to very long sentences and to paragraphs as to the shorter sentences usually found in our grammars. A very valuable use of it can be made by requiring pupils to copy and analyze long passages

Sample Page of Instruction Paper. Subject—Pedagogics of Grammar.

92. Drill with Irregular Verbs.—It has been stated that most of our errors of speech come from a misuse of the irregular verbs. The best practical way in which to remedy this state of things is by frequent *oral* drills; for it is by *hearing* the correct forms, not once or twice, but many times, that we learn to use them. It is not by studying grammar that we learn to speak in conformity with its rules and principles, but *by hearing much, reading much, and speaking much*. No teacher should imagine that he has taught the verb well unless his pupils can give the principal parts of all the irregular verbs in common use. In addition, his pupils should be persistently exercised in such drill work as is indicated below :

<i>Subjects.</i>	<i>Principal Parts.</i>	<i>Complements.</i>
I	has do, did, have had	done { my work carefully. the best I can (could). my work this morning. the task yesterday. the example many times. }
We		
He		
She		
They		
It		
Henry	}	
The girls		

The foregoing will suggest what should be put upon the blackboard for any irregular verb. The pupil should be required to make a complete *statement* with each subject when the verb form and the complement are indicated by the teacher.

Later, the statement may be converted into a *question*. Thus,
I do my work carefully. We do our work carefully. He does his work carefully. Etc.

Do I do my work carefully? Do we do our work carefully? Does he, etc.?

The progressive statement and the progressive question may constitute a third and a fourth variety of exercise. Thus,

I am doing, etc. We are doing, etc.

Am I doing the best I can? Etc.

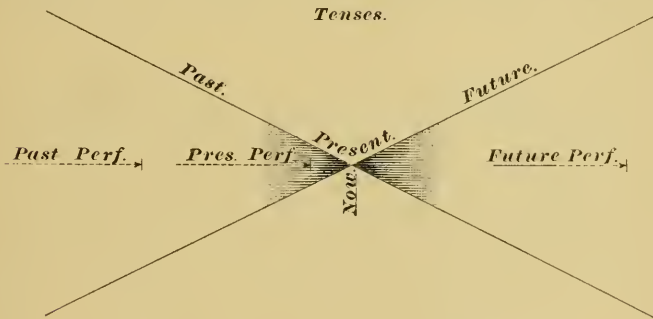
By turning the same drills into the negative form and abbreviating, we get a much needed drill with *I'm not doing, I don't do, He doesn't do, He isn't doing*. The question with *not* naturally

Sample Page of Instruction Paper. Subject—Pedagogics of Grammar.

THE TENSES OF VERBS.

117. Definition.—Tense is a variation in the form or use of verbs and of verb-phrases to denote difference in the time and degree of completeness of the expressed action. After what has already been said on this subject, the student will understand how slightly the idea of time is denoted by tense forms, except in the case of the indicative mode. It is, however, in all the modes, best to observe a uniformity of names, even though their signification of time varies.

In order to prepare for a better understanding of the subject of tense in general, the writer has thought best to present first the tenses of the indicative mode. The following diagram will



be found useful in furnishing the pupils with clear notions on this somewhat puzzling matter. The diagram should be placed upon the blackboard, to be explained by teachers and pupils.

118. The Present Tenses.—The shaded part of the diagram is intended to show that the word *present* in ordinary speech does not mean *now—this instant*. *Now* is, as it were, a steadily-moving mathematical point; the *present* is a variable portion of time on both sides of *now*. Thus, we say *this minute*, *today*, the *present month*, *this year*, *century*, *epoch*, etc. To “act in the living present,” human beings need more than this mathematical *now*. Strictly speaking, there is no present time—all being past or future. So that we use the word *present*, both

Sample Page of Instruction Paper. Subject—Pedagogics of History.

21. How History is Usually Recited.—There are two principal methods of “conducting recitations” that are thoroughly and unmitigatedly bad. Each of these has its slight modifications. These methods are :

(I) *The Verbatim Recitation.*—Let us suppose that the class is ready to recite. The work begins by the teacher’s asking, “Who can tell me where the lesson today begins and where it ends?” He opens the history at the place indicated by the pupils, most of whom are not able to answer his question. This preliminary question indicates clearly that the teacher himself is not prepared for the recitation. If he were not provided with a textbook, he would be utterly unable to “hear the recitation.” The pupils, too, must have their books under their desks in order to get the cue when they are about to be called to recite.

“John, you may begin with Lincoln’s Administration,” says the teacher. John recites. “Very good, John, except that you said *institution* for *inauguration*, and you left out *through Baltimore*.” While John recited, the teacher followed the text with his index finger. John is pleased and shows it, for the teacher said, “Very good!” That miscalled word and the omitted phrase did not count either with John, the class, or the teacher. “Next; tell us about —.” And so the pitiful exhibition goes on. John, of course, doesn’t know the meaning of this farce; nor does his teacher, for if he did, some better way would be found. John and his parents think themselves fortunate in having a teacher so exacting, one that compels the “scholars” to study their lessons. The teacher takes occasion to congratulate the parents on having so studious a son—and he really means it.

(II) *The Question-and-Answer Recitation.*—For this species of recitation, less preparation on the part of the pupil is required than is necessary with the method described above. He must learn the dates, and the meaning of the text sufficiently to be able to identify the teacher’s questions with the several portions of the text. If the teacher is more than usually obliging—or

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